SBS Booklet

2024-2025 EDITION

Lake & Peninsula School District

CONTENTS

OVERVIEW OF LPSD'S STANDARDS-BASED SYSTEM

LPSD INSTRUCTIONAL PHILOSOPHY AND IMPLEMENTATION

Mission Statement

We will nourish student growth by investing in partnerships & implementing culturally responsive, place-based education.

Vision Statement

We will grow self-directed, life-long leaner who are grounded in their culture & contribute to their communities.

In 2024-2025 LPSD will begin its 24th year as a standards and performance-based district. Teachers, administrators, staff and community members have worked hard over the years to develop, adapt, and adopt standards. *These standards form the basis of our curriculum.*

Students are leveled in each content area and receive instruction at their actual ability level rather than age as in a traditional system. Resources have been carefully chosen to align with our standards and teachers are expected to use LPSD recommended resources (see LPSD Resources list). However, since we realize not every student fits into the same mold, when a recommended resource fails to meet a student's needs, a teacher should work with their principal/coach and Curriculum Coordinator to document the need for an alternate resource. If different resources need to be purchased, an *Application to Purchase New Resource* form should then be filled out and submitted to LPSD Superintendent and Curriculum Coordinator.

In order to graduate from LPSD, a student must earn a specific number of credit types and acquire a minimum of twenty-one credits (see Credit Conversion and Pacing Chart). Instruction is to follow the balanced instructional model below:

Retention:		Looks Like:
10% of what we hear 20% of what we see	Drill & Practice	Reading, hearing words, looking at pictures, watching movies, looking at an exhibit, watching a demonstration, listening to a lecture, worksheets
70% of what we say	Practical Application	Participating in a discussion, giving a talk, presenting information
90% of what we say and do	Simulation	Doing a dramatic presentation, simulating the real experience
95% of what we teach others	Real-Life Connections	Doing the real thing, teaching others

SUBJECTS & LEVELS

Reading	•Levels 0-12 •Minimum graduation level: 10 •Minimum number of credits needed to graduate: 2.0
Writing	•Levels 0-12 •Minimum graduation level: 10 •Minimum number of credits needed to graduate: 2.0
Math	•Levels 0-12 •Minimum graduation level: 10, or 12 •Minimum number of credits needed to graduate: 3.0
Social Studies	•Levels 0-11 •Minimum graduation level: 3 levels from levels 8, 9, 10, 11 •Minimum graduation credits needed to graduate: 3.0 •2024-2025 HS rotation: Level 8 (US Government & AK History) •Level 8 AK History standards must be completed before graduation
Science	•Levels 0-11 •Minimum graduation level: 2 levels from levels 9, 10, 11 •Minimum graduation credits needed to graduate: 2.0 •2024-2025 HS rotation: Level 11--Earth and Space Science
Technology	•Levels 4-12 •Minimum graduation credits needed to graduate: 2.5
Cultural Awareness	•Levels 4-12 •Minimum graduation credits needed to graduate: 1.5
Employability	•Levels 4-11 •Minimum graduation credits needed to graduate: 5.0

ASSESSMENT OF STANDARDS

Advanced *
- High quality work that shows in-depth understanding
- Demonstrated through explaining or teaching to others (90% or higher)

Proficient +
- Quality work that meets standard
- Demonstrated independently (80-89%)

Developing ~
- Work is complete, but struggling
- Needs guidance from teacher (70-79%)

Emerging -
- Lack of effort, or misplaced in level

LPSD LEVEL ASSESSMENTS

Must complete before advancing to the next level

- Reading
- Writing
- Math

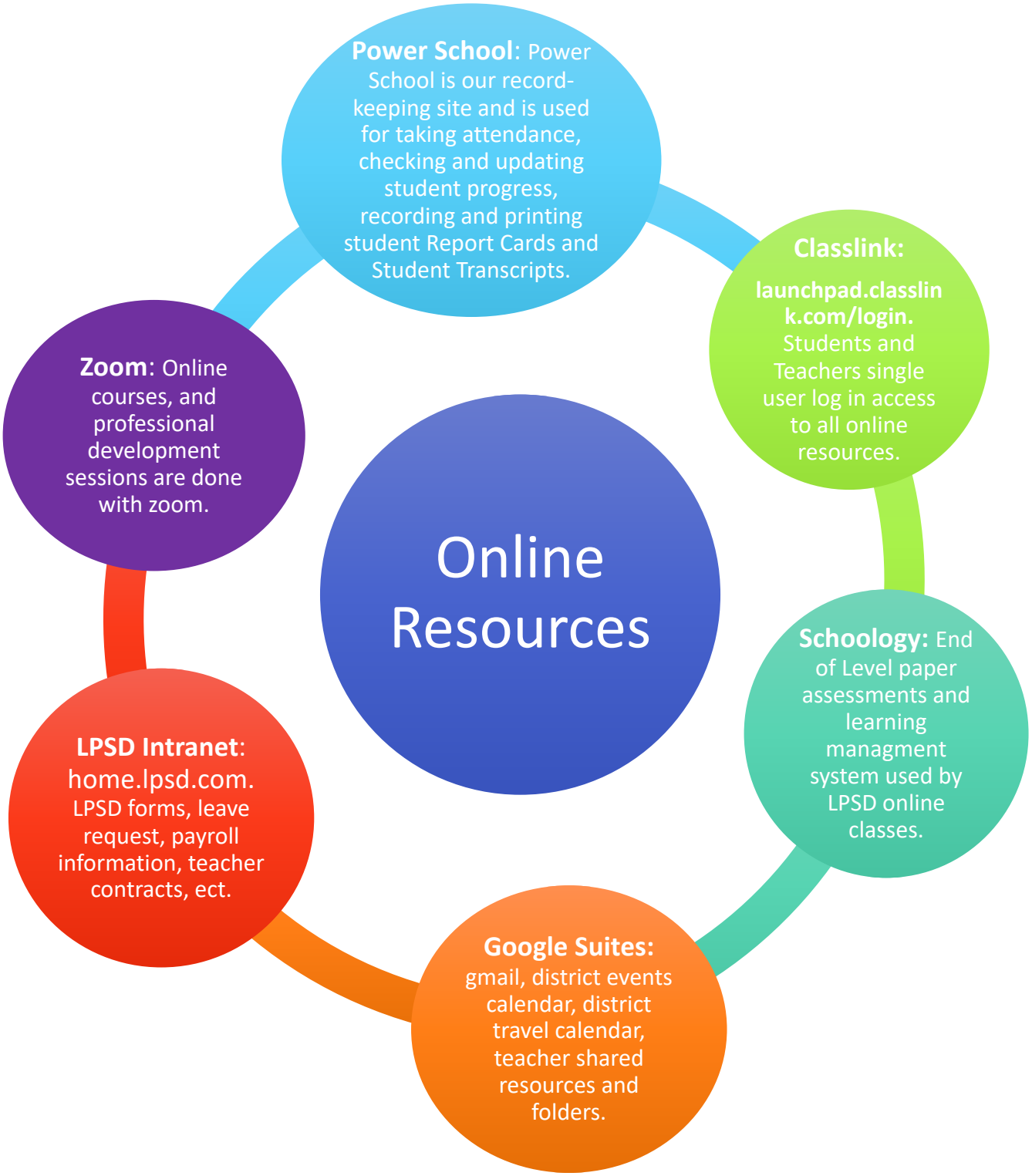
Given after standards are complete within a level AND teacher and student are confident essential standards have been mastered

- Avoid "over prepping" for level assessments. But do use the practice assessments in LV 6+ to boost confidence.
- Must earn a proficient score or higher to advance to the next l.evel

If student receives less than proficient score...

- Student must review for sufficient period (i.e. two week minimum) before retaking assessment.
- See assessment documents in Schoology Resources for detailed instructions

ONLINE RESOURCES



PROFESSIONAL DEVELOPMENT/COLLEGIALITY

- Professional development time is to be used for districtwide professional development, data collection/intervention planning, updating student records, and specific site issues.
- Out of district professional development: available as budget allows – check with the Curriculum Coordinator.
- Teamwork is essential to student progress. Strive to be a team-player.
- Because of our Standards Based System and the drive to meet each student's needs, teachers are flexible and share ownership of student grades/ages/subject areas within their schools. This often results in a more fluid daily schedule than what you would normally see in a traditional school setting.
- Be cognizant of email etiquette. Reply to important emails within 24hrs.
- Keep itinerant travel/events recorded on District calendars. This will allow you to be aware of who is in your building, and when.
- Communicate! Seek help when you need it. We are all willing to share knowledge, and help each other be successful.
- Take advantage of your unique situation, be safe – laugh and enjoy!

Online Learning Agreements

- Keep in mind the safety and confidentiality of our staff and students.
- Be mindful of other learners. Respect all others on the call.
- Assume Positive Intent.
- Be fully present. If bandwidth allows, keep camera on during meetings.
- Take care of yourself and take risks to connect, ask questions and engage in your learning.

GO TO LIST 2024-2025

Standards-Based System/Resources	
Standards, LPSD Assessments, Resources, Record Keeping, Professional Development	Nicole Metzgar
Attendance, Enrollment, Diplomas, Transcripts, Powerschool Schedules	Cassie Broscious
Online Resources (WIKI, Schoology, Online Assessments, Classlink Resources)	Nathan McArthur
Early Childhood Literacy Program (newborn-3 year olds), LPSD Mentorship	Amber Kresl
Child Find and Migrant Education Recruitment/Records Management	Becca Stenson
CTE Programs	Zach Stenson/ Patty McCasland
LV 9 and LV 10 EOL Writing Prompt Coordinator	Nicole Metzgar
Student Athletics and Activities	Ed Lester
Itinerant Counseling Services	Kacy Lou Leyba
LPSD Social Worker	Elisabeth Ludwig
Online Classes	
LPSD, In-Disrict, Online Program Coordinator and Oversight.	Josh Stauber
Out-Of-District Online classes (for super-seniors, students going beyond graduation minimums, and special cases)	Nicole Metzgar
Zoom	Sam Rigby
Online Tutoring	TBA
Data Driven Instruction	
AK State Testing	Moon McCarley
Amplify Screener and AK Reads Act	Moon McCarley
NWEA MAP Assessments – Administration, Progress Monitoring, Intervention Process and Resources	Moon McCarley
Technology	
Educational Technology & Powerschool and Schoology Support	Nathan McArthur
Software Curriculum Programs	Nathan McArthur
Hardware	Sam Rigby/ Schyler Rippie
Google Apps (email, forms, etc.)	Sam Rigby
Personnel and Payroll	
Certified Paperwork, and Payroll	Amy Blessing
Staff Leave, Mandatory Training, Added Duty Stipends	Bill Cornell

PACING, COURSES, CREDITS

CREDIT CONVERSION & PACING CHARTS 2024-2025

Credit Conversion/Minimum Graduation Levels (Shaded)

LPSD Credit Levels in black, graduation minimum levels in blue, top numbers are grade levels

Standard Area	0	1	2	3	4	5	6	7	8	9	10	11	12
Reading (2 credits min.)										1	1	1	1
Writing (2 credits min.)										1	1	1	1
Math (3 credits min.)									1	1	1	1	1
Social Studies* (3 credits min.)									.5 .5	1	1	1	
Science (2 credits)										1	1	1	
Technology (2.5 credits)									.5	1	1	.5	.5
Cultural Awareness (1.5 credits)										.5	1	1	1
Employability** (5 credits)									1	2	2	1	
* Need to earn three social studies credits from Levels 8-11. Students must complete the AK Studies portion of Level 8 SS in order to graduate. *** Employability LV 8 is LPSD's PE graduation requirement.													

Pacing Chart

Standard Areas	0	1	2	3	4	5	6	7	8	9	10	11	12
Reading	K	1	2	3	4	5	6	7	8	9	10	11+	
Writing	K	1	2	3	4	5	6	7	8	9	10	11+	11+
Math*	K	1	2	3	4	5	6	7	8	9	10	10	11+
Social Studies**	K	1	2	3	4	5	6-7	7-8	9-11	9-11	9-11	9-11	
Science	K	1	2	3	4	5	6	7	8	9	10	11+	
Technology					4-5	5-6	6-7	7-8	9-12	9-12	9-12	11+	11+
Cultural Awareness					4	5	6	7	8	9-12	9-12	11+	
Employability					4-5	5-6	6-7	7-8	9-12	9-12	9-12	11+	
* Need to complete **either** Math Level 10 or Level 12 ** Need to earn three Social Studies credits from Levels 8-11. Students must complete the AK Studies portion of Level 8 SS in order to graduate. ***Need to complete EMP LV 8 or transfer in one PE credit to graduate.													

Criteria for Half Credits in Credit-Bearing Levels

Subject/Level	Criteria for .5 Credit
Math: Level 8-12	Half or more standards complete with a score of proficient or advanced.
Science: Level 9-11	Half or more standards complete with a score of proficient or advanced.
Writing: Level 9-12	Complete at least half the standards at an appropriate level with a score of proficient or advanced
Reading: Level 9-12	Complete at least half the standards at an appropriate level with a score of proficient or advanced
Social Studies: Level 8	US Civics and Government section (8.1.1-16) OR AK History and Government section (8.2.1-17) complete with a score of proficient or advanced
Social Studies: Level 9-11	Half or more standards complete with a score of proficient or advanced.
Technology: Level 8	Level 8 is a .5 credit level
Technology: Level 9	Completes 7 standards (9.1-9.14) with a score of proficient or advanced
Technology: Level 10	Completes 1 standard (10.1-10.7) with a score of proficient or advanced.
Cultural Awareness: Level 9	Level 9 is a .5 credit level
Cultural Awareness: Level 10	Completes capstone project with a score of proficient or advanced is equivalent to 1 credit.
Employability: Level 8	Completes six standards (8.1-8.12) with a score of proficient or advanced.
Employability: Level 9	Completes eight standards with a score of proficient or advanced. Level 9 is worth 2-credits, so 1 credit would be awarded.
Employability Level 10	Completes five standards with a score of proficient or advanced. Level 10 is worth 2-credits, so 1 credit would be awarded.

LPSD Approved Courses for the Alaska Performance Scholarship

Subject	Course Title	District Course #	Credit	APS Course Equivalency
Science	Level 9 Biology	SC LV 9	1	HS Biology
Science	Level 10 Physical Science	SC LV 10	1	HS Physical Science
Science	Level 11, Earth and Space	SC LV 11	1	HS Earth and Space Science
Science	Approved Online/ In-Person SC Courses			Physical SC, Biology, Earth SC, Chemistry, Physics, Marine Biology, Anatomy & Physiology
Math	Level 9, Algebra I	MA LV 9	1	Algebra 1 Equivalent
Math	Level 10, Geometry	MA LV 10	1	Geometry Equivalent
Math	Level 11, Algebra II	MA LV 11	1	Algebra II Equivalent
Math	Approved Online/ In-Person Math Course			Trigonometry, Pre-Calculus, Calculus, Calculus II, Statistics
Language Arts	WR Level 9, Writing 9	WR LV 9	1	9th Grade English
Language Arts	WR Level 10,Writing 10	WR LV 10	1	10th Grade English
Language Arts	RE Level 9, Reading 9	RE LV 9	1	9th Grade English
Language Arts	RE Level 10, Reading 10	RE LV 10	1	10th Grade English
Language Arts	WR Level 11, Advanced Composition I	WR LV 11	1	Composition Equivalent
Language Arts	WR Level 12, Advanced Composition II	WR LV 12	1	Advanced Composition Equivalent
Language Arts	RE Level 11 and 12, American Literature	RE LV 11 and 12	2	American Literature Equivalent
Language Arts	Approved Online/ In-Person LA Course			British Literature Equivalent, World Literature, Speech & Debate, Creative Writing
Social Studies	SS Level 8, Alaska Studies	SS LV 8	0.5	Alaska History
Social Studies	SS Level 8, US Government	SS LV 8	0.5	American Government

Social Studies	SS Level 9, Early US History	SS LV 9	1	American History
Social Studies	SS Level 10, Late US History	SS LV 10	1	American History
Social Studies	SS Level 11, International Studies	SS LV 11	1	World History
Social Studies	Approved Online or In-Person SS Course			Geography, Civics, Economics, Western Civilization, Eastern, Civilization, Psychology, Sociology
World Languages	Approved Online or In-Person WL Course			Foreign Language, Alaska Native Language, Sign Language

College Ready

3.5 GPA
Complete all levels of LPSD core subjects and 6 levels above (Honor's Diploma)
90% Attendance
25 Hours community service
2 or more organized co-curricular activities
Completes FAFSA OR applies for college admittance

One of the following:

Algebra II—(Level 11)
Dual credit college English or Math
Completion, with a passing score, of college developmental/remedial English and/or Math

OR

ACT test scores: English 18, Reading 22, Science 23, Math 22
AccuPlacer: place into credit-bearing college English
ALEKS Math: place into credit-bearing college Math

Career Ready

Career pathway identified and explored plus two or more of the following benchmarks:

90% Attendance
25 Hours Community Service
Workplace Learning Experience
Industry Credential
Dual Credit Career Pathway Course
2 or more organized co-curricular activities

Dual Enrollment and Dual Credit

BP 6146.1-3 LAKE AND PENINSULA SCHOOL DISTRICT DUAL CREDIT POLICY

College Coursework Transfer Equivalency for LPSD High School Credit

This policy provides students the opportunity to receive credit for certain course credits earned through accredited institutions of higher education. Students are responsible for submitting college course transcripts to the district's registrar and curriculum coordinator in a timely manner.

College courses must be "100" level and above for core academic courses (math, science, social studies/history, English, world language). Students completing college coursework will receive high school credit as follows:

0.5 high school credit for a one (1) or two (2) semester hour college course
1.0 high school credit for a three (3) or four (4) semester hour college course
1.5 high school credit for a five (5) or six (6) semester hour college course

Upon completion, an official transcript must be submitted to LPSD's District Registrar and Curriculum Coordinator and will be recorded on the student's transcript in the semester the final grade was issued.

- College course work courses may be used for specific curriculum credit and for elective Credit.
- Non-core academic classes (BBRCTE, and other courses already within dual credit agreement with LPSD) will be awarded credit according to established agreements or existing curriculum avenues. LPSD partners and credit agreements will be predetermined before the student begins the class.

Students taking distance learning or dual credit courses shall comply with all school rules, including student rights and responsibilities.

The following chart is a guideline for course equivalency with the University of Alaska classes. It is not exhaustive and other classes may be approved for graduation requirements at the Principal's and Curriculum Director's discretion.

LPSD and UA Equivalency Guide

LPSD Graduation Requirement	UA Equivalency Courses
Reading LV 9 Reading LV 10 Writing LV 9 Writing LV 10	WRTG 110- Intro to College Writing WRTG 111-Writing Across Contexts WRTG 211-Writing & the Humanities WRTG 212- Writing & the Professions WRTG 213- Writing & the Sciences WRTG 214- Arguing Across Context ENGL 200- World Literature ENGL 226- Survey of American Literature 1800-Present ENGL 261/270- Introduction to Creative Writing
Math LV 9 Algebra 1	Math 105- Intermediate Algebra Math 121- College Algebra for Managerial and Social Studies Math 151-College Algebra for Calculus
Math LV 10 Math LV 11 Math LV 12 Math Electives	Math 105- Intermediate Algebra Math 113- Concepts and Contemporary Application of Math Math 121- College Algebra for Managerial and Social Math 151- College Algebra for Calculus Math 152- Trigonometry Math 251/252- Calculus I/II STAT 252- Elementary Statistics
Science LV 10 Physical Science	PHYS 123/124- Basic Physics I/II (non-calculus intro) PHYS 211/212- General Physics I/II (calculus based)
Science LV 9 Biology	BIOL 102- Introductory Biology BIOL 111/112- Human Anatomy and Physiology I/II
Social Studies LV 11 World History	HIST 101/102- Western Civilization I/II HIST 105- World History I
Social Studies LV 10 US History	HIST 131/132- History of United States I/II
Social Studies LV 8A Alaska History	ANS 101- Intro to Alaska Native Studies ALST 300- Alaska Studies
Social Studies LV 8B US Government	PS 101- Intro to American Government
Electives	Any 100 level or above academic class

Advanced Online Course Options Supported by LPSD

A student must fall under one of the following categories listed below in order to take an advanced online course.

A. The student has completed graduation levels and is planning on pursuing a post-secondary education: When a student has completed graduation requirements in a subject area, and his/her teacher is unable to provide instruction a level past the graduation minimum in that subject area, a student may apply to take an online course from one of the following LPSD approved programs:

1. University of Alaska (UAA,UAF,UAS, and rural UA branches):
   http://www.uaf.edu/rural/, https://www.alaska.edu/alaska/

2. Brigham Young University, BYU Independent Study:
   http://ce.byu.edu/is/site/

3. APEX Learning:
   http://www.apexlearningvs.com/

Students must agree to pay for these courses in advance, or complete a Financial Aid Advanced Course Application. Upon successful completion of the course (within the scheduled timeframe with a score of "C" or higher), the student may submit the final grade, and course receipts, to LPSD's District Office (Theresa Wilson <twilson@lpsd.com) for reimbursement.

Courses taken from institutions outside of those listed above will be reimbursed up to a maximum amount of $200 per credit hour, and $150 for books and materials, per course.

Students who qualify to take advanced coursework, are eligible to take the following number of credits, based on their grade level:

9th Grade Year: 6 credits	11th Grade Year: 24 credits
10th Grade Year: 9 credits	12th Grade Year: 24 credits

B. Students who are past the scheduled graduation age, and/or who have extenuating circumstances that make it difficult or impossible for a teacher to meet the student's needs: Teacher/Principal must contact the Curriculum Coordinator for approval to enroll in HS BYU Independent Study, or APEX courses. With approval, a student's enrollment is paid for by LPSD, but if course(s) are not successfully completed (within 120 day timeframe with a "C" or higher), a student will not be allowed to enroll in another credit recovery course.

C. High school students who have shown proficiency in LPSD LV 8 Reading and Writing are eligible to apply for advanced online language courses. Examples of language learning courses include: Alutiiq, Yupik, Dena'ina, Spanish, Russian, ect.

INSTRUCTION

BEGINNING A NEW YEAR:
ADVICE FOR MULTI-LEVEL INSTRUCTION

1. Grouping for multi-level instruction

a) Identify the range of levels you have in your classroom for the content you are teaching (see Power School, previous teacher comments, and Student Record End of Year Checkouts). Work with other teacher(s) at your site to make sure teaching assignments are organized in the most efficient way possible based on student levels.
b) Identify the resources that each level of students will be using for each content area.
c) Use AMPLIFIED screener results, MAPS data and AK Star & Science results to determine appropriate Tier for each student (Tier I, Tier II, or Tier III). This will help you identify appropriate resources.
d) Identify any student who is in our Special Education program and work with the Special Education instructor assigned to your site to determine educational goals and resources.
e) Use all of this information to group students based on LPSD levels/standards and the resources they will be using for instruction.

2. Review Standards, Assessments, and Student Work

a) Review standards for each level you are teaching using Power School or the Standards Booklet.
b) Identify standards that students need to complete using Power School.
c) Review past assessments and classroom work (Power School, Student Record End of Year Checkouts) students have completed and note strengths and weaknesses.
d) Review student work in Student Records End of Year Checkout form to determine students' current levels as a refresher for what needs to be accomplished in specific content areas.

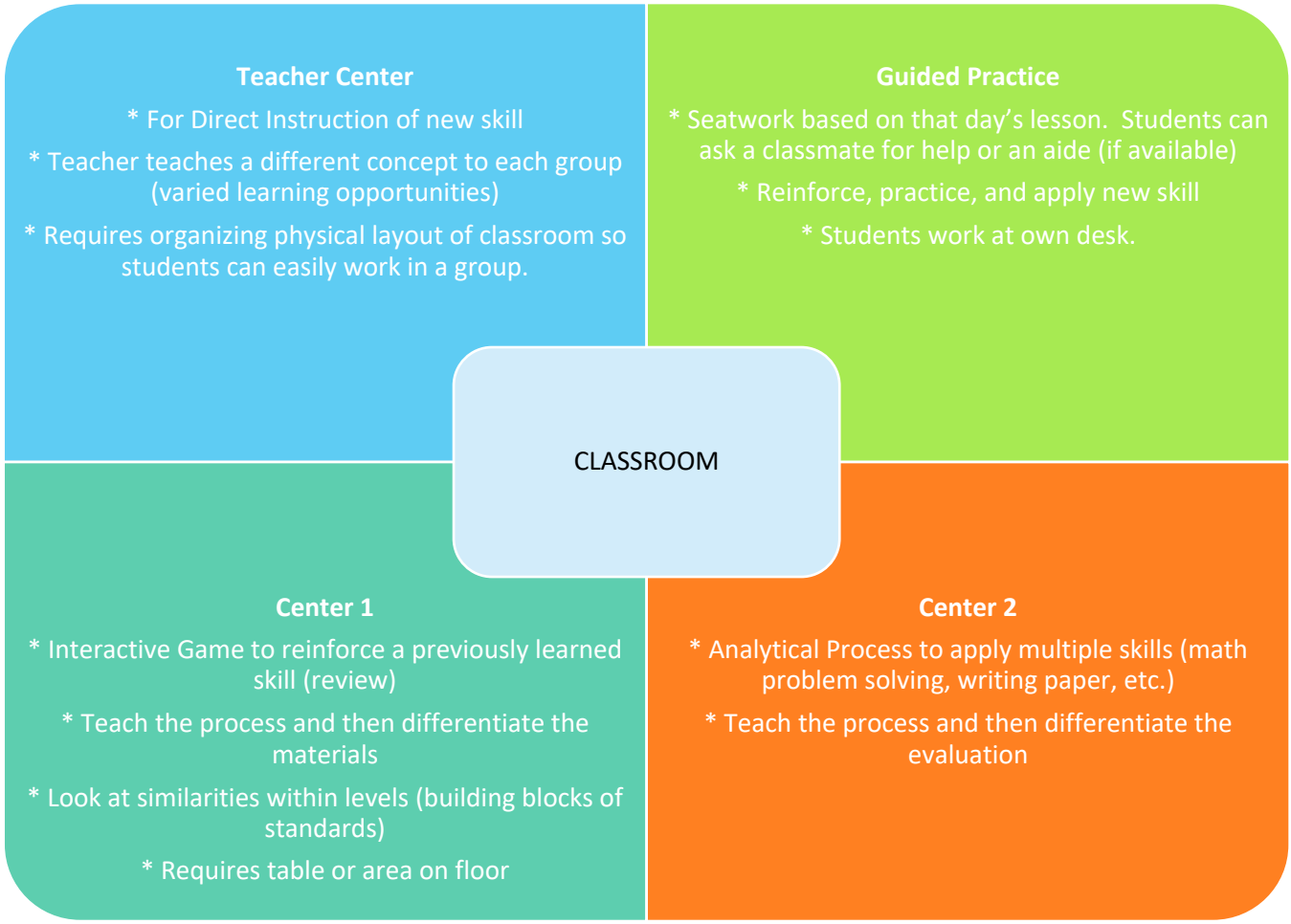
3. Organizing Instruction

a) Review the LPSD resource list and identify resources for each Tier of instruction. Locate resources in your building.
b) Notice that for most of our content areas, strands are uniform across levels. This may allow you to provide direct instruction to several levels at the same time.
c) Begin to organize your schedule so you can provide direct instruction to groups in the most efficient way possible. Make sure while you are providing direct instruction, other groups are provided independent work (from core resource, classroom aides and/or volunteers, ALEKS, IXL, etc.) that will help them reach mastery of the standards they are working on.
d) Seek help in organizing your classroom and planning instruction from your principal.

CENTERS

Sample of One Day's Centers

Here is an example of how a secondary math teacher was able to meet four diverse levels within one classroom.



Time	Teacher	Guided Practice	Center 1	Center 2
9:00	Group A	Group D (yesterday's lesson)	Group C	Group B
9:15	Group B	Group A	Group D	Group C
9:30	Group C	Group B	Group A	Group D
9:45	Group D	Group C	Group B	Group A

Tips on Teaching in Multi-Level Classrooms

1. Staggering your start times can help if you have the same group of students all day. For instance, if you start Group A above when the rest of the class is doing SSR, you avoid the issue of having Group D work on the guided practice from yesterday's lesson. Group A simply does their SSR time after they are finished with all four centers.

2. Alternating days for Direct Instruction allows each group to spend more time with you in one sitting. If you do this make sure to plan for activities in the centers that take a longer period of time.

3. Protect your instructional time at your center by doing the following:
    a. Have clear expectations and consequences for working independently at center time (utilize peer, self, and teacher evaluations of behavior; discipline system; etc.).
    b. Structure stations so that activity involves a product (i.e., game recording sheet, problem solving steps on paper, etc.).
    c. Allow peer help or schedule aide help.

4. If stations involve a process that is new to students, teach/model the process to the whole group prior to beginning centers.

5. Have station directions written briefly and concisely. Use picture directions with simple words for primary students.

6. Color code student folders for independent work; students have a card or sticker on desk with their color in each subject.

7. Have a list of 5-10 things students can do (in order of importance) if they finish early posted in your class.

If you finish early….

1. Check your work.
2. Finish work that has not been completed (homework) from another class.
3. Work on your PEP.
4. Work on your writing portfolio.
5. Read a book.
6. Clean your desk/locker.

Lake and Peninsula School District Education Action Map

Student _____ School _____ Year _____
Teacher _____ DOB _____ ID # _____

My progress to date:

Subjects/ (grad.Level)	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11
Reading (10)												
Writing (10)												
Math (9 + 10 or 12)												
Science (10)												
Social Studies (3 levels)												
Technology (10)												
Cult. Aware. (10)												
Employability (10)												

I want to reach graduation proficiency in _____ semesters. The following table is a map of desired progression. I will revise my Education Action Map each semester.

	Fall 2024	Spring 2025	Fall 2025	Spring 2026	Fall 2026	Spring 2027	Fall 2027	Spring 2028	Fall 2028	Spring 2029
Reading										
Writing										
Math										
Science										
Social Studies										
Technology										
Cult. Aware										
Employability										

Student Signature Date Parent Signature Date Teacher Signature

LPSD DATA DRIVEN INSTRUCTION

LPSD teachers use data as the basis for aligning resources to specific student needs. Data should be collected from a number of sources. These include, but are not limited to, formative assessments, assessments aligned to curriculum, AK STAR scores, and observation. In addition, LPSD uses universal screeners as a tool to collect data for data driven instruction. This is the NWEA MAP Assessment and AMPLIFIED Screener.

Teachers provide universal screening for students K-9, three times per year. MAP Growth is used for 3-9 grade students. AMPLIFIED Screener is used for K-3 students.

Students found to be in Tier II or Tier III on the AMPFLIFIED Screener or MAP Growth assessments will be progress monitored. These students will also receive instructional intervention. An Intervention Team will be available to assist teachers in designing interventions. Intervention may be needed for students based on other data sources as well.

LPSD RECOMMENDED LEXILE LEVELS

Level	CCSS Lexile Range*	Sample Texts**
1	190-530	Seuss, Dr. *Green Eggs and Ham* Aliki. *My Five Senses*
2	420-650	MacLachlan, Patricia. *Sarah, Plain and Tall* St. George, Judith. *So, You Want to Be President?*
3	520-820	
4	740-940	Babbitt, Natalie. *Tuck Everlasting* Buckmaster, Henrietta. *"Underground Railroad."*
5	830-1010	
6	925-1070	L'Engle, Madeleine. *A Wrinkle in Time* Partridge, Elizabeth. *This Land Was Made for You and Me: The Life and Songs of Woody Guthrie*
7	970-1120	
8	1110-1185	
9	1050-1260	Zusak, Marcus. *The Book Thief* Brown, Dee. *Bury My Heart at Wounded Knee*
10	1080-1335	
11+	1185–1385	Fitzgerald, F. Scott. *The Great Gatsby* Anaya, Rudolfo. *"Take the Tortillas Out of Your Poetry."*

General Experiencing Out Guidelines and Requirements

Experiencing Out Summary:
Students often have experiences outside of the regular school day or year that significantly contribute to their learning. "Experiencing out of a level" allows you to take those out-of-school experiences and receive credit for them. These experiences could include trapping, commercial or subsistence fishing, packing/guiding, carpentry, roustabout, apprentice electrician, plumber, mechanic, welding, community service, any labor for hire, or other experiences you feel would qualify. This is a student initiated process, with the formal documentation of the experience is done afterwards, excepting the log of hours which is done during the experience.

The general process is as follows:

Log experience using the log template

Have your supervisor complete the Supervisor Evaluation of Experience form

Create Portfolio Pieces

Present to your Community Organization

Upload portfolio files to the Google Drive folder

Have your teacher of record complete your evaluation and mark off the level in PowerTeacher

In order to receive credit, the following requirements must be fulfilled by the student:

1. 75 Hours on-the-job for .5 credit, 150 hours for 1 credit; logged and signed by student & supervisor.
2. Documentation: copies of any required licenses plus paystubs, receipts, and/or invoices, furs, fish, or other related materials.
3. Supervisor Evaluation of Experience form, completed and signed by supervisor.
4. Successful completion of portfolio.
5. Successful presentation to community entity.
6. Proficient or Advanced score by teacher of record.
7. Portfolio uploaded to Google Drive folder.

If you're interested in experiencing out of a level, please let your teacher or principal know.

LPSD Experiencing Out FAQ

Question	Answer
What is experiencing out?	A student using learning experiences they have outside of the regular school day/year (an after school job, moose hunt with family, spending summer at a fish camp, commercial fishing, trapping, winter break activities, etc.) as credit in place of a content level.
Is there a pre-approval process for experiencing out?	No. However, it is important that a student has a clear understanding of the extent of what is required if they wish to experience out of a level.
Who can experience out of a level?	Any student.
What content areas can a student experience out of?	Science, Social Studies, Technology, Cultural Awareness, or Employability.
Can a student experience out of a level of Reading, Writing, or Math?	If a student is wanting to experience out of Reading, Writing, or Math, the student must present their experience and portfolio to the LPSD School Board, Registrar, and Curriculum Director for final determination
What level does experiencing out start at?	Level 0 for Science and Social Studies; Level 4 for Technology, Cultural Awareness, and Employability
How is the content area for experiencing out determined?	The student proposes, after the experience, the best fit for the content area they should experience out of. For younger students, this can obviously be more teacher directed
Can a student "double-dip" in multiple content areas?	A student cannot use one experience to experience-out of two levels in the same, or different content area.
Could a student use two different, but similar experiences, to experience out of levels at different times?	Yes. For example, a student might spend every summer at fish camp, and choose every fall to use the experience to experience out of a level of Cultural Awareness. This is possible, but the student must show growth and complete a new portfolio of their experience every year. For example, one year a student might show that they know how to head, gut, and split fish; while the next year they might focus on setting, picking, and mending nets.
Who can be a student's supervisor?	A boss, captain, crew leader, chaperone, parent, relative, or anyone working with the student in a mentoring capacity.
What if an emerging or developing mark by a teacher is challenged by a student's supervisor?	The Curriculum Director should be notified, and will then submit the student's portfolio to be reviewed by a committee of teachers from sites other than the student's homesite.
What can qualify as a portfolio piece?	A paper, PowerPoint, video, speech, etc. of the student's experience. This piece should be in depth, and appropriate for the student's reading, writing, and technology level.
Who does the student need to present their portfolio to?	A **community entity**, which could include an LSAC, City Council, Tribal Council, or community organization. This should be a formal presentation, and much more than simply presenting in front of the student's class or part of the student body.
Where should a student's final project be posted?	The student should post their final project in the District Experiencing Out Google Drive folder This will allow other students to see what a student has done to experience out of a level.

CTE for High School Credit

LPSD will offer high school credit for Bristol Bay Regional Career and Technical Eduction (BBRCTE) courses that LPSD students successfully complete with a C or higher grade or P for Pass or Fail courses. These courses will appear as elective credits and count towards meeting the high school graduation credit requirement of 9 elective credits.

.5 HS credit will be awarded for successful completion of:

1. Each 1 week intensive BBRCTE course
2. Each online course worth 2 or more credits

Currently, 1 credit online courses will not be awarded high school credit. The onsite teacher will need to observe, evaluate and update appropriate Cultural Awareness, Technology, and/or Employability standards that the student masters through their participation in the 1 credit online course.

Process to follow:

1. CTE personnel will email the LPSD Registrar final grades.

2. LPSD Curriculum Director aligns the CTE course to an elective content area (EMP, CA, or TE).

3. .50 credit is awarded for each CTE course completed.

4. LPSD Registrar updates student records.

RESOURCES LIST

	TIER I – CORE	Tier I – Supplemental	Tier II	Tier III
READING	**Levels 0-3:** • Nat. Geo. Cengage Reach for Reading • Heggerty Phonics--10 min a day	**Levels 0-3:** • FCRR (binder) • Six-Minute Solution • Read Live	**Levels 0-3:** • Reading Mastery • FCRR Activities (binder) • Phonics for Reading (L3) • Read Live	**Levels 0-10:** • Reading Mastery • FCRR (binder) • Phonics for Reading (L3) • Read Live
		Teacher Resources • Words Their Way • Unlocking Literacy • Bring Words to Life • Scholastic Reading Counts • IXL ELA	**Teacher Resources** • Road to the Code • Phonemic Awareness in Young Children • Ladders to Literacy • Reading Counts • IXL ELA	**Teacher Resources** • Road to the Code • Phonemic Awareness in Young Children • Ladders to Literacy • Reading Counts • IXL ELA
	Levels 4-10: • Nat. Geo. Cengage (L 4-6) • Collections (L 6-8) • McDougal/Littell Literature (L 9-12) • CommonLit 360 Curriculum Units • Novel studies	**Levels 4-10**: • FCRR (binder) • Rewards (Beg./Int.) • Six-Minute Solution • Novel Ties • Daily Analogies • Scope Scholastic Magazine • IXL ELA • Read Live • McDougall/Littell Literature (L 7-8)	**Levels 4-10:** • Language! • Reading Mastery (L 4-6) • FCRR (binder L 4-6) • Phonics for Reading (L 3-8) • Rewards (Beg./Int.) • Six-Minute Solution • Read Live • IXL ELA • Read Live	**Levels 4-10:** • Language! • Reading Mastery (L 4-6) • FCRR (binder) • Phonics for Reading (L3-8) • Rewards (Beg./Int.) • Six-Minute Solution • Read Live • IXL ELA • Read Live
		Teacher Resources • Phonics and Spelling Through Phoneme-Grapheme Mapping • Words Their Way • Unlocking Literacy • Bring Words to Life	**Teacher Resources** • Phonics and Spelling Through Phoneme-Grapheme Mapping • Words Their Way • Unlocking Literacy • Bring Words to Life	**Teacher Resources** • Phonics and Spelling Through Phoneme-Grapheme Mapping • Words Their Way • Unlocking Literacy • Bring Words to Life

	Tier I – Core	Tier I – Supplemental	Tier I – Supplemental	Tier II & III

WRITING	**Levels 0-10:**
	• Units of Study in Writing
	• LPSD Writing Curriculum Guide
	  • K-5
	  • 6-8 (Portfolio)
	
	Teacher Resource
	Writing Revolution: Sentence Building Activites
		Levels 0-10:
		• Daily Oral Language
		Writers Inc. (L 8-10)
		All Write (L 6-8)
		• Write One (L 1)
		• Write Away (L-2)
		• Write on Track (L 3)
		• Writer's Express (L 4-5)
		• IXL ELA
		• Write Source (L 4-10)
		• Excellence in Writing, Teaching Writing: Structure and Style (Pudewa)
		• Common Core 360 Writing Units
			Levels 0-10:
			• McDougal Littell: Grammar for Writing 7 (L 7-8)
			• McDougal Littell: Grammar for Writing 8 (L 9-10)
			• 6 Trait Binder
			• 6+1 Traits of Writing,
			• Grades 1-2 (L 1-2)
			• 6+1 Traits of Writing, Grade 3 and UP (L 3+)
			D'Nealian Handwriting (L 0+)
				Levels 4-10:
				• Language!
				• IXL ELA
				• A Structured Approach to Writing SRA

	Tier I – Core	Tier I – Supplemental	Tier II	Tier III
MATH	**Level 0-5** • Everyday Math **Level 6:** • Reveal Math Crse. 1 **Level 7:** • Reveal Math Crse. 2 **Level 8:** • Reveal Math Crse. 3 **Level 9:** • Reveal Algebra 1 **Level 10:** • Reveal Geometry **Level 11:** • Reveal Algebra II **Level 12:** • Practical Business Math Procedures • Consumer Math	**Levels 0-6:** • Redbird online • IXL Math • ALEKS Math **Level 6-12:** • Pizazz binders • Reveal Online • IXL Math • ALEKS Math	**Levels 0-10:** • Redbird Online • IXL Math • ALEKS Math • Khan Academy	**Levels 0-10:** • Redbird Online • IXL Math • ALEKS Math • High School Remedial/ Credit Recovery APEX Math Courses

	Tier I – Core	Tier I – Supplemental
SCIENCE	**Levels 0-2:** • Next Gen Science Standards • Mystery Science **Levels 3-5** • Next Gen Science Standards • Mystery Science **Level 6-8** • LV 6 Savvas Elevate Science: Course 1 Integrated Science • LV 7 Savvas Elevate Science: Course 2 Integrated Science • LV 8 Savvas Elevate Science: Course 3 Integrated Science • Elevate Science Labware Materials **Level 9-11** • LV 9 Biozone Life Sciences Textbook (Biology) • LV 10 Biozone Physical Sciences Textbook • LV 11 Biozone Earth and Space Sciences Textbook	**Levels 0-5** • Science: A Closer Look Activity Book • Science: A Closer Look Leveled Readers • IXL Science **Level 6** • Science: A Closer Look Reading Essentials **Level 6-8** • Red, Green, Blue Laboratory Activities • Red, Green, Blue Reading Essentials • IXL Science **Level 7-10** • IXL Science

	Tier I – Core	Tier I – Supplemental	Tier II	Tier III
SOCIAL STUDIES	**Levels 0-2:** • Scott Foresman – All Together **Level 3** • LV 3 AK Studies Curriculum Guide **Levels 4-5:** • Scott Foresman – The United States **Levels 6-7** • Pearson – History of Our World **Level 8** • Pearson – Macgruder's American Government • AK Studies standards as listed in the SBS **Levels 9-10** • Pearson – United States History **Level 11** • Pearson – World History	**Levels 0-11** • WIKI • IXL Social Studies • **Levels 0-2** • Kindergarten Big Books • Grade 1, 2, 3 Leveled Readers • Map Sack Grades K-2 • Test Talk Practice Bk. Gr. 2, 3 **Levels 4-5** • Test Talk Practice Bk. Gr. 4, 5 • Grade 4, 5 Leveled Readers • Map Sack Grades 3-6 **Level 8** • icivics.org • Teacher Created Resources **Levels 9-11** • Teacher shared lesson in wiki/google sites/ drive	**Levels 6+:** • AGS US History	**Levels 6+:** • AGS US History

	Tier I – Core
CULTURAL AWARENESS	**ALL Levels:** • See Cultural Awareness Guide • See Teacher Created Resources https://abookofcreatures.com/?s=alaska Could link to ELA/CA standards http://www.qungasvik.org/home/ Could link to CA, EMP, ELA, https://www.uaf.edu/mcc/ Could link to MA, CA, ELA https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/3c97a4d3-9962-4656-b7fb-b17c930f2347/content (Documenting Alaska's Indigenous Astronomy) https://www.uaa.alaska.edu/depts/planetarium/star-clock.cshtml (Big Dipper Star Clock)

	Tier I – Core
TECHNOLOGY	**All Levels:** See Teacher Created Resources **Upper Levels:** • The Computer Companion for Individual and Classroom Use: 30 Practical Lessons • Cyber Literacy For The Digital Age- B.E. Publishing • Commonsense.org • Code.org • Khan Academy https://www.khanacademy.org/computing

	Tier I – Core
EMPLOYABILITY	**All Levels:** • See Teacher Created Resources • CTE • AKCIS (Online) aksci.com **Level 7-10:** • Activity and Assessment Guides (LPSD Intranet)

TECHNOLOGY RESOURCES

READING & WRITING TECHNOLOGY	**All Levels:** http://readingandwritingproject.com readworks.org commonlit.org khanacademy.org https://www.oercommons.org/ **IXL ELA** access through classlink
MATH TECHNOLOGY	**Levels 0-5:** **Everyday Math** accessed through classlink **Levels 6-12:** **Reveal** accessed through classlink **Levels 3+** **Gizmos** accessed through classlink **Aleks Math** **http://www.aleks.com** **Levels 0-5 (can accommodate other levels in special cases):** **IXL** Math access through classlink **https://www.oercommons.org/**

SCIENCE & SOCIAL STUDIES TECHNOLOGY	**Social Studies All Levels:** **IXL** access through classlink https://www.oercommons.org/ **Science All Levels** aksci.com https://www.oercommons.org/ http://www.ixl.com/ access through classlink **Science Levels K-5:** Science4Us access through classlink **Science Levels K-5:** **Mystery Science** access through classlink **Science Levels 3-12:** **Gizmos** access through classlink **Levels 6-8: Savvas** access through classlink **Levels 9-11: Biozone** access through classlink

EMPLOYABILITY & CULTURAL AWARENESSS TECHNOLOGY	**Employability All Levels:** Alaska Career Information System. https://acpe.alaska.gov/AKCIS **Cultural Awareness Apps:** Language Apps: **ChildApp-** has Lake Iliamna dialect Yup'ik, Dena'ina (Nondoltan Inland Dialect), Sugt'stun, and soon Alutiiq (Perryville dialect) **Yugtun App-** Also a great App for language learning in Yup'ik Type in Alutiiq in App store: Lots of kids stories to choose from Naaqerkat: has different types of Yugtun stories read in the language with English translations **Elder Stories App:** Stories from around our region and southcentral region. Historical, experiences, and legends. This can be incorporated into science/history, non-fiction writing (Earthquake of '64 Tsumani, Valdez oil spill, Novarupta) Writing/story-telling (legends or capturing local elder stories)

LPSD AI Acceptable Use Policy

As with all things we do in our district, your use of AI should align with our district vision:

LPSD Vision: We grow **self-directed, life-long learners** who are **grounded in their culture** and **contribute to their communities**

Core Questions: Before using AI ask yourself…

- Will this use of AI help me be more **self-directed**?
- Will this use of AI strengthen my capacity to become a **life-long learner**?
- Is this use of AI representative of the **values of my culture**? (Honesty, Hard Work, Self-Reliance, etc.)
- Will this use of AI help me become someone who can **contribute productively to my community**?

Purpose of Assignments

Assignments aim to develop students' skills in critical thinking, communication, literacy, and creativity. Assignments are designed not just to evaluate knowledge, but also to cultivate these skills, encouraging original thinking and personal growth. They are avenues for students to explore, articulate, and defend their ideas.

Academic Integrity and AI

Academic Integrity, in the context of AI use, means using AI tools ethically, responsibly, and as intended – to support your learning, not to bypass it. It implies producing work that is primarily your own, and appropriately acknowledging assistance received from AI.

Violation of Policy

1. **Unattributed Use:** Copying significant portions of AI-generated content without appropriate citation.

2. **Over-reliance:** Leaning on AI to do most of the work, particularly the critical thinking or creative aspects of assignments.

3. **Substitution:** Using AI to bypass necessary steps in assignments, such as reading or analysis.

Please remember, the main purpose of education is to learn and grow, and while AI can be a helpful tool in that process, it cannot replace your active engagement and efforts. Let's use AI responsibly, respecting the principles of academic integrity.

Guidelines for AI Use

Overall Guiding Principle - Learning, Not Completing:
Use AI as a tool for learning, not just for task completion. Your primary goal should be understanding and skill development, not simply finishing an assignment.

Guideline 1 - Idea Generation:
AI can be used as a tool for assistance in **brainstorming** and **organizing** ideas. However, the bulk of the thinking, analysis, and composition should be your own.

Acceptable Uses	Unacceptable Use
Asking for a list of potential writing topics or a prompt. Seeking suggestions for additional resources, books, or references related to the topic.	Requesting a completed paper on a topic without doing the necessary research or writing.
Seeking guidance on how to structure an essay or formulate a thesis statement based on the reading material.	Requesting AI to write the entire essay or provide a ready-made thesis statement.

Guideline 2 - Feedback:
AI can be used as a tool for **improving writing, grammar, and syntax**. It can also be used to **check your understanding** on a topic.

Acceptable Uses	Unacceptable Use
Requesting help with improving the structure, clarity, vocabulary or grammar in your writing.	Asking the AI to complete your grammar work or complete an essay or paper on the topic without doing the necessary research or writing.
Requesting it generates a multiple choice or essay question that you then answer to have it check your understanding and offer suggestions.	Asking for direct answers to multiple-choice questions or quizzes without attempting to answer them independently.

Guideline 3 - Tutoring and Clarification:
Use AI for **clarifying doubts or seeking explanations**, not as a shortcut to avoid reading, analysis, computation and comprehension. Use AI to ask questions as you would your teacher. Just as your teacher would not provide "what are the answers," neither should AI.

Acceptable Uses	Unacceptable Use
Requesting help with understanding complex vocabulary or sentence structures, or rewriting a reading passage at a simpler reading level.	Asking things like “What are the main points of the reading passage?” without reading the text yourself.
Asking for help in understanding the historical or cultural context of a literary work or a scientific or historical event. Asking to set up and solve a similar math problem to one in a homework assignment.	Requesting direct answers to discussion questions or assignments without reflecting on the material. Asking it to solve the exact problem from the assignment.
Asking for suggestions on how to analyze character development or themes in a novel.	Requesting a detailed plot summary or book review without reading the book.

Guideline 4 - Reference and Citation:
If significant insights or phrases are borrowed from AI, these should be **properly cited**, much as you would cite a human source.

Acceptable Uses	Unacceptable Use
Using MLA or APA citation guidelines to create in-text citations to indicate when information was acquired from AI.	Copying and pasting work done by AI into assignments without giving credit.
Seeking guidance on how to properly cite and reference sources used in an essay or project.	Asking for a pre-written bibliography or list of sources without conducting personal research.

Place Based Learning Cultural Themes for Each Month

LPSD's Cultural Advisory Committee encourages

- Teachers to share the monthly themes with community leaders and LSAC's to learn about culturally appropriate place based activities at each school site.
- Students to investigate local places and gather research and stories about that place. collaborate with elders and other community members to create a presentation to share with others (local events, district events, and virtually).
- Teachers and Students to include indigenous language immersion as much as possible into all learning.

September: September-Silvers moon
Month of the Shedding of the Velvet

- Spruce hens (Sep/October)
- Cooking/ Preparing Food
- Indigenous Language Immersion
- Using harvested animal parts to meet math standards of weighing, finding patterns,
- Plant medicine harvest–before snow falls
- Berry preservation
- Perserving harvests

October: October-Runny nose moon
Yup'ik- -Qaariitaarvik (Time of the masked festival). We call October
Maskalaatarvik which is also more Sugstun – time of masking.
Dena'ina- K'eghun Shani -'half summer'
Alutiiq- Kak'gllum Iralua "runny nose moon"

- Indigenous Language Immersion
- Cooking/Preparing Food
- Bird Migration
- Cardinal Directions
- Festival before things get really cold—drumming, Ircentarraat Blessing (Little People)
- Spruce hens (Sep/Cctober)

November: November-Thanksgiving moon
Yup'ik - 'Cauyarvik' (drumming)
Dena'ina - Shagela N'u'i (trout month)
Alutiiq - Qakiiyat Iraluat (silvers' moon)

- Trapping/Snaring –Check Regulations- Beaver season opens
- Cooking/Preparing Food
- Learning how water freezes and water safety
- Candle fish - Kokhanok
- Atkiq dance zoom recordings
- Boat maintenance
- Indigenous Language Immersion

December:
Yup'ik- Uivik 'Going around'
Dena'ina- Venen nunqelts'edi 'Month sun descends'
Alutiiq-Snow moon

- Indigenous Language Immersion
- Stories about Indigenous Astrology
- Preparing for winter, winterizing homes
- Trapping/Snaring –Check Regulations
- Cooking/Preparing Food
- Indigenous Language Immersion

January:Jan- 1st moon
January - freezing of lakes and rivers (ice monitoring? safety?)

- Cooking/Preparing Food
- Indigenous Language Immersion

February: Feb- Short moon

- Ice fishing February and March months
- Cooking/Preparing Food
- Indigenous Language Immersion
- Chignik's: Masking
- Dog mushing
- Trapping/Snaring –Check Regulations
- Indigenous Language Immersion

March: March- Hungry Moon

- Ice fishing February and March months
- Indigenous Language Immersion

April: April-Warming Moon

- Bird hunting
- Indigenous Language Immersion

Summer Activities/ Camps
May- Red salmon moon; Bird hunting; Mating The Season-birds; Indigenous Language Immersion
June- Plants/Salmon moon
July-Pink Salmon moon
August-Berry moon; Indigenous Language Immersion

Dena’ina Months

1. January (1) venen nuyilqu’i (NIl) ‘month getting light again’
2. February (1) venen nutchiłi (L) month of snow’
3. March (1) łiq’aka’anu’i (N) ‘king salmon month’
4. April (1)ndałi n’u (N) ‘migrating birds month’
5. May (1) venen dghazhi (NOIl) ‘egg month’
6. June (1) venen tuneyashi (N) ‘water increases’
7. July (1) łiq’a n’u (NIl) ‘sockeye salmon month’
8. August (1) venen k’enijuni (I) ‘month of ripe berries’
9. September (1) venen dak’telk’ehi (L) ‘month horns shed skin’
10. October (1) k’eghun shani (NO) ‘half summer’
11. November (1) shagela n’u’i (L) ‘trout month’
12. December (1) venen nunqelts’edi (Il) ‘month sun descends’

ATTENDANCE & RECORD KEEPING

Powerschool Expectations Throughout the Year

Teachers:

1. Spend 30 min a week working in Powerschool to keep attendance and records accurate.

2. Monthly reflection on personal Powerschool attendance and grading activity. Could be on paper or digitally via a google form. See site Principal for direction on how this will look for your site.

3. Connect monthly with your Principal to discuss your Powerschool activities.

4. Have all grades for standards updated for Quarterly Report Cards.

5. Support school attendance and record keeping.

Principals:

1. Attend Powerschool training sessions to support school record keeping.

2. Spend 30 minutes a week working in Powerschool: Reviewing Student Snapshots, Historical Grades, and Transcripts to check for recording of activities/standards and any anomalies.

3. Monthly connect with each teacher to visit about teacher Powerschool reflections and share available Powerschool data with individual teachers.

4. Work with Teachers to support them taking attendance daily.

5. Support school attendance and record keeping.

Registrar & Curriculum Director- Double check student records on Power School and help with problem-solving. And always available to listen to ideas on ways to make work meaningful and efficient.

End of the Year Student Records Check Out Forms

Greetings LPSD Teachers,

Due to the individualized nature of LPSD's Standard Based System, it is important every teacher leaves detailed End of Year Records for each student of record during the school year. On the next page, you will find a paper copy of the digital form you will fill out for each student. The Curriculum Director will email you a digital copy of this form during the Spring Semester. The document is called, **End of the Year Student Records Check Out (EOY)**. I personally, like to make a new tab for each student, so I only have one document to work with. I also like to share this document with other onsite teachers that teach my students other subjects.

If students are in online Reading and Math classes, please collaborate with their online teacher to update the EOY Records. LPSD Distance teachers will be sharing information with you that you will need to copy into each student's EOY Record.

The goal is to collaborate (when appropriate) on one report for each student.

These reports are reviewed by returning staff in August, and shared with new teachers so that they know where to resume instruction that concluded in May.

Once you have completed this form for every student, you will need to upload them to a google drive that will be shared with you in April. There is a unique folder created for each site. Student records should be saved in the school folder of the site the student was enrolled in at the end of the school year.

Appropriate MAPS and AMPLIFIED reports should also be uploaded.

Teachers, Principals and Head Teachers, please print and save a hard copy of these reports on site. In August, distribute them back to the appropriate staff. These reports should be used to make instructional decisions that best meet the individualized needs of the students at each site.

Please make sure that all records are up to date in PowerSchool (and EOY Record forms) before leaving for the summer. And, if at all possible, (but no pressure), teachers should be working with students to complete levels and to mark them complete in Powerschool before the last school dismisses for summer break.

Please reach out with any questions and/or concerns.

Chin'an. Qyuana.
Nicole Metzgar, Curriculum Director
907-781-3201
nmetzgar@lpsd.com

End of the Year Student Records Check Out for end of Year _____

STUDENT NAME: **AGE:** **STATE GRADE LEVEL:**

MAP Growth – Student Profile Report		**Attached**	Yes	☐	No	☐
AMPLIFY mClass - Individual Student Performance Profile	Grades K-3	**Attached**	Yes	☐	No	☐

READING	Level @ End School Year	Resources Used	Level Assessments	Novels Read
			End of Level Score:	
NA				
PowerSchool Updated:	☐	Comments:		

Writing	Level @ End School Year	Resources Used	Level Assessments	Papers Completed	In Student Binder?
			End of Level Score:		☐
					☐
					☐
					☐
					☐
PowerSchool Updated:	☐	Comments:			

Math	Level @ End School Year	Resources Used	Level Assessments	
			End of Level Score:	
PowerSchool Updated:	☐	Comments:		

SOCIAL STUDIES	Level @ End School Year	Resources Used		Projects/Units Completed
PowerSchool Updated:	☐	Comments:		

SCIENCE	Level @ End School Year	Resources Used		Projects/Units Completed
PowerSchool Updated:	☐	Comments:		

TECHNOLOGY	Level @ End School Year	Resources Used		Projects/Units Completed
PowerSchool Updated:	☐	Comments:		

CULTURAL AWARENESS	Level @ End School Year	Resources Used		Projects/Units Completed
PowerSchool Updated:	☐	Comments:		

EMPLOYABILITY	Level @ End School Year	Resources Used		Projects/Units Completed
PowerSchool Updated:	☐	Comments:		

CTE	Courses Completed

HIGHEST PRIORITIES

HOW TO BEGIN THE New SCHOOL YEAR

School is a welcome, secure, and safe environment that the community is happy with.	
Listen to learn and discover the values of your community.	
Connect with Place & Each Other	Records & Data
Before August Inservice	
Are the following safe and ready for use: school building, school vehicle(s), teacher housing, school grounds.	Principals give LPSD Registrar Powerschool information regarding which teacher will be teaching each course for each student before August 28th.
Spend time outside. Get to know the community and teaching staff. Unpack and settle into your new home.	Order devices and emails for new students. Check devices and charge and update them for returning students.
All learning apps are accessible for students via classlink.	
During August Inservice	
Does each child have a device? Is it charged and updated? Are the learning apps accessible for students via classlink?	
Attend Virtual Inservice. Get to know the staff you will be working with and other LPSD staff. If appropriate, have team building and get-to-know you activities with staff.	Understand the SBS system and how student progress is recorded in Powerschool and shared throughout the year in quarterly Report Cards.
Find ways to incorporate place based learning into the learning and teaching of the standards.	Verify Powerschool classes and students and teachers. Verify your Powerschool home rooms. Know how to take attendance.
Learn about the resources (including teachers with experience) to teach the standards.	Enroll and Register any new/ transfer students and any other students that are not showing up in Powerschool.
Familiarize yourself with the students and standards you will be teaching.	As you plan your first week, questions to consider are: How will you group students for each subject? How will you teach/manage groups? What will groups do when

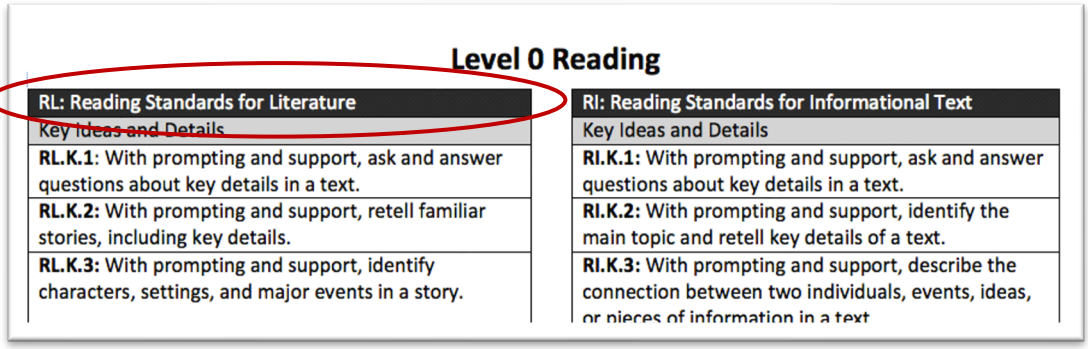
Will there be special education pull-outs? Have you talked to the special education teacher and become familiar with your role in the IEP? Will you have an aide? Have you introduced yourself to the aide and talked to the aide about expectations?	you are teaching a different group? What subjects/lessons would be conducive to whole group instruction? Will you use digital assistance?
New teachers: Do you know how to assess students with MAPs and/or Amplify?	
Day 1: WELCOME & CELEBRATE STUDENTS AND THEIR SCHOOL COMMUNITY	
It is important to build a school- community connection. Consider having a back to school picnic/potluck for the community to meet and greet the teachers.	Teachers are able and do take attendance daily for AM and PM homeroom in Powerschool.
Week 1–is a short week. SETTING UP ROUTINES	
Set up routines and move through the schedule. Use lessons and activities to get students familiar with the classroom routines you will use for the rest of the school year.	Teachers are able and do take attendance daily for AM and PM homeroom in Powerschool.
	Continue to enroll and Register any new/ transfer students and any other students that are not showing up in Powerschool. Check that all new registers can access classlink and have accounts for the Amplify Screener.
Continue to learn about your students and the community as you learn about the standards and available curriculums.	Work out kinks in schedules. Make sure students are in the levels they are supposed to be in. Understand where/how to find this information.
Are all students supervised throughout the day and working on appropriate levels? If any independent study, how will you set up accountability and support systems?	
Week 2 ASSESSING STUDENTS	
Amplify screen all K-3 and look at the data.	Teachers are able and do take attendance daily for AM and PM homeroom in Powerschool.
Use lessons and activities to gather information about your students to plan appropriate learning paths that they are motivated to study. There will be a summer learning slide. It typically takes about 2 months before students are performing where they left off in May.	Understand how online (distance courses for secondary students) operate and what the schedule is.
	Learn about Powerschool Expectations for the school year
	Continue to work out kinks in schedules. Make sure students are in the levels they are supposed to be in and that each student has a solid schedule.

Continue to use lessons and activities to get students familiar with the routines in your classroom.	Make sure all juniors and seniors are on track to graduate or have a co-created plan to graduate. (Include guardians in this discussion).
Do you have secondary students talking about summer jobs, service projects, or cultural related travel? Do you know how to lead students through the Experiencing Out process, so they can earn relevant credit?	
Week 3 DIVE INTO LEARNING	
Dive into the curriculum and learning! Daily mandatory curriculum lessons in Reach for Reading and Everyday Math. By week 3 and forward, you should be teaching the curriculum with fidelity.	Teachers are able and do take attendance daily for AM and PM homeroom in Powerschool.
Continue formal and informal assessment of student skill set and knowledge to guide appropriate learning paths.	Powerschool: How to Activate a Student by Marking the Top Standard with a D
Students who are 2 levels behind grade level have been identified and the intervention plan is in progress.	Make sure all juniors and seniors are on track to graduate or have a co-created plan to graduate (Include guardians in this discussion).
Week 4 INTERVENTIONS and HIGH SCHOOL GRADUATION PLANS are in place	
Are interventions in place for students needing them?	Teachers are able and do take attendance daily for AM and PM homeroom in Powerschool.
All students are receiving the instruction and support they need to excel in the SBS for this school year. Begin with the end in mind: What will my students be required to master with Proficiency by April? Will students need to take and pass a District End of Level Assessment for their level?	Learn how to Insert grades, assignments, and comments in Powerschool. Begin spending 30 min a week in Powerschool to update records and take daily attendance. Next week, begin monthly self reflections and conversations with principals about individual Powerschool Activities.
Write a monthly pacing plan for the year for each subject and level that you teach. Plan to revise it each month.	

STANDARDS

HOW TO READ READING & WRITING STANDARDS

Standards highlighted in blue have been identified as "essential" to master in order for a student to be successful in the next level. Students will be assessed on the mastery of the highlightd in blue standards in the LPSD's End of Level Assessments for reading, writing skills and math.

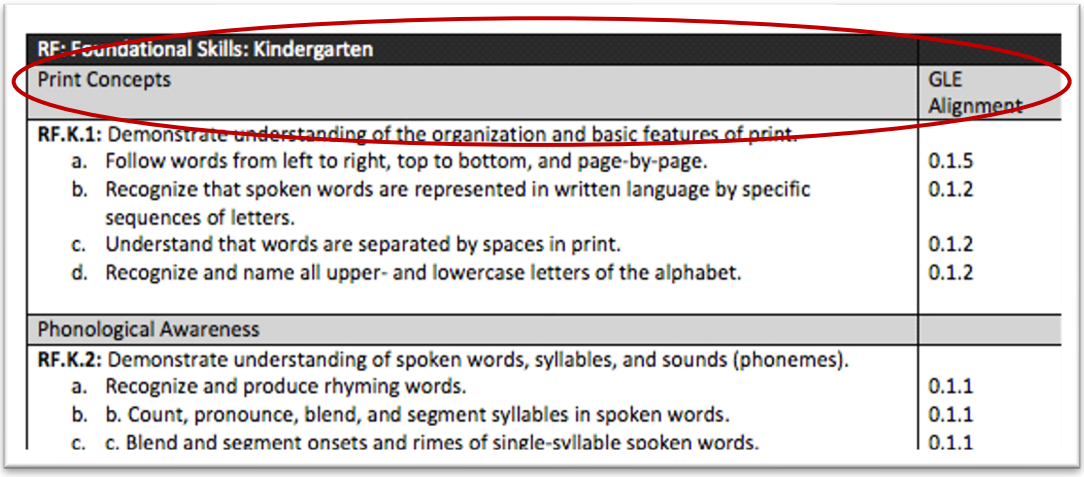


Level 0 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
Key Ideas and Details	Key Ideas and Details
RL.K.1: With prompting and support, ask and answer questions about key details in a text.	**RI.K.1:** With prompting and support, ask and answer questions about key details in a text.
RL.K.2: With prompting and support, retell familiar stories, including key details.	**RI.K.2:** With prompting and support, identify the main topic and retell key details of a text.
RL.K.3: With prompting and support, identify characters, settings, and major events in a story.	**RI.K.3:** With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text

Black headings indicate **STRAND**. Reading has 4 strands: Reading Standards for Literature (RL), Reading Standards for Informational Text (RI), Foundational Skills (RF) [Levels 0-5 ONLY), and Speaking and Listening (SL). Writing has 2 strands: Writing (W) and Language (L).

Gray shading indicates CLUSTER followed by ANCHOR standards which are consistent across Levels. Level



RF: Foundational Skills: Kindergarten	
Print Concepts	GLE Alignment
RF.K.1: Demonstrate understanding of the organization and basic features of print.	
a. Follow words from left to right, top to bottom, and page-by-page.	0.1.5
b. Recognize that spoken words are represented in written language by specific sequences of letters.	0.1.2
c. Understand that words are separated by spaces in print.	0.1.2
d. Recognize and name all upper- and lowercase letters of the alphabet.	0.1.2
Phonological Awareness	
RF.K.2: Demonstrate understanding of spoken words, syllables, and sounds (phonemes).	
a. Recognize and produce rhyming words.	0.1.1
b. b. Count, pronounce, blend, and segment syllables in spoken words.	0.1.1
c. c. Blend and segment onsets and rimes of single-syllable spoken words.	0.1.1

specific ANCHOR standards are listed under CLUSTER.

SL: Speaking and Listening: Kindergarten	
Comprehension and Collaboration	GLE Alignment
SL.K.1: Participate in collaborative conversations about *kindergarten topics and texts* with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). b. Continue a conversation through multiple exchanges.	Not aligned
SL.K.2: Confirm understanding of written texts read aloud or information presented orally or through media by asking and answering questions about key details and requesting clarification if something is not understood.	Not aligned
SL.K.3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.	Not aligned

Level specific standards for Speaking Listening STRAND are listed below CLUSTER (Comprehension and Collaboration).

W: Writing Standards: Kindergarten	
Text Types and Purposes	GLE Alignment
W.K.1: Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is . . .*).	0.1.1
W.K.2: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.	0.1.2
W.K.3: Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.	0.1.3
Production and Distribution of Writing	
(Begins in grade 3)	
W.K.5: With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.	0.6.1

Writing STRAND and ANCHOR Standards: Text types and Purposes, Production and Distribution of Writing. Level Specific Standards listed below ANCHOR standards.

W.K.1: "W" refers to WRITING STRAND
"K" refers to KINDERGARTEN (Level 0)
"1" refers to ANCHOR Standard number

L: Language Standards: Second Grade	
Conventions	GLE Alignment
L.2.1: Observe conventions of grammar and usage when writing or speaking.	
a. Use collective nouns (e.g., *group*).	Not aligned
b. Form and use frequently occurring irregular plural nouns (e.g., *feet*, *children*, *teeth*, *mice*, *fish*).	2.5.1
c. Use reflexive pronouns (e.g., *myself*, *ourselves*).	Not aligned
d. Form and use the past tense of frequently occurring irregular verbs (e.g., *sat*, *hid*, *told*).	2.5.2
e. Use adjectives and adverbs, and choose between them depending on what is to be modified.	Not aligned
f. Produce, expand, and rearrange complete simple and compound sentences (e.g., *The boy watched the movie*; *The little boy watched the movie*; *The action movie was watched by the little boy*).	2.4.1
L.2.2: Observe conventions of capitalization, punctuation, and spelling when writing.	
a. Capitalize holidays, product names, and geographic names.	2.5.3
b. Use commas in greetings and closings of letters.	2.5.4
c. Use an apostrophe to form contractions and frequently occurring possessives.	2.5.5
d. Generalize learned spelling patterns when writing words (e.g., *cage* → *badge*; *boy* → *boil*).	2.5.6
e. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.	2.6.6
Effective Language Use	
(Begins in grade 3)	
Vocabulary Acquisition and Usage	
L.2.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 2 reading and content*, choosing flexibly from an array of strategies.	

Above note:

Strand: Language

Clusters: Conventions, Effective Language Use
Vocabulary Acquisition and Usage
Anchor Standards: 1, 2, 4 (3 not available for Level 2)
Sub-standards: a-f for Anchor Standard 1 and a-e for Anchor Standard 2
L.2.4: refers to Language Strand, Level 2, Anchor Standard 4

LPSD READING STANDARDS

Level 0 Reading

RL: Reading Standards for Literature
00.R.RL.CL1 Key Ideas and Details
00.R.RL.01: With prompting and support, ask and answer questions about key details in a text.
00.R.RL.02: With prompting and support, retell familiar stories, including key details.
00.R.RL.03: With prompting and support, identify characters, settings, and major events in a story.
00.R.RL.CL2 Craft and Structure
00.R.RL.04: Ask and answer questions about unknown words in a text.
00.R.RL.05: Recognize common types of texts (e.g., storybooks, poems).
00.R.RL.06: With prompting and support, name the author and illustrator of a story and define the role of each in telling the story.
00.R.RL.CL3 Integration of Knowledge and Ideas
00.R.RL.07: With prompting and support, describe the connection between pictures or other illustrations and the overall story in which they appear.
(Not applicable to literature)
00.R.RL.09: With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.
00.R.RL.CL4 Range of Reading and Level of Text Complexity
00.R.RL.10: Actively engage in group reading activities with purpose and understanding.

RI: Reading Standards for Informational Text
00.R.RI.CL1 Key Ideas and Details
00.R.RI.01: With prompting and support, ask and answer questions about key details in a text.
00.R.RI.02: With prompting and support, identify the main topic and retell key details of a text.
00.R.RI.03: With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text
00.R.RI.CL2 Craft and Structure
00.R.RI.04: With prompting and support, ask and answer questions about unknown words in a text.
00.R.RI.05: Identify the front cover, back cover, and title page of a book.
00.R.RI.06: Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.
00.R.RI.CL3 Integration of Knowledge and Ideas
00.R.RI.07: With prompting and support, describe the connection between pictures or other illustrations and the overall text in which they appear.
00.R.RI.08: With prompting and support, identify the reasons an author gives to support points in a text.
00.R.RI.09: With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
00.R.RI.CL4 Range of Reading and Level of Text Complexity
00.R.RI.10: Actively engage in group reading activities with purpose and understanding.

RF: Foundational Skills: Kindergarten
00.R.RF.CL1 Print Concepts
00.R.RF.01: Demonstrate understanding of the organization and basic features of print. a. Follow words from left to right, top to bottom, and page-by-page. b. Recognize that spoken words are represented in written language by specific sequences of letters. c. Understand that words are separated by spaces in print. d. Recognize and name all upper- and lowercase letters of the alphabet.
00.R.RF.CL2 Phonological Awareness
00.R.RF.02: Demonstrate understanding of spoken words, syllables, and sounds (phonemes). a. Recognize and produce rhyming words. b. b. Count, pronounce, blend, and segment syllables in spoken words. c. c. Blend and segment onsets and rimes of single-syllable spoken words.

d. d. Isolate and pronounce the initial, medial vowel, and final sounds (phonemes) in three-phoneme (CVC) words.1 (This does not include CVCs ending with /*l*/, /*r*/, or /*x*/.) e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.
00.R.RF.CL3 Phonics and Word Recognition
00.R.RF.03: Know and apply grade-level phonics and word analysis skills in decoding words. a. Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant. b. Associate the long and short sounds with the common spellings (graphemes) for the five major vowels. c. Read common high-frequency words by sight. (e.g., *the*, *of*, *to*, *you*, *she*, *my*, *is*, *are*, *do*, *does*). d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ.
00.R.RF.04: Read emergent-reader texts with purpose and understanding.

SL: Speaking and Listening: Kindergarten
00.R.SL.CL1 Comprehension and Collaboration
00.R.SL.01: Participate in collaborative conversations about *kindergarten topics and texts* with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). b. Continue a conversation through multiple exchanges.
00.R.SL.02: Confirm understanding of written texts read aloud or information presented orally or through media by asking and answering questions about key details and requesting clarification if something is not understood.
00.R.SL.03: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
00.R.SL.CL2 Presentation of Knowledge and Ideas
00.R.SL.04: Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
00.R.SL.05: Add drawings or other visual displays to descriptions as desired to provide additional detail.
00.R.SL.06: Speak audibly and express thoughts, feelings, and ideas clearly.

LEVEL 1 Reading

RL: Reading Standards for Literature
01.R.RL.CL1 Key Ideas and Details
01.R.RL.01: Ask and answer questions about key details in a text.
01.R.RL.02: Retell stories, including key details, and demonstrate understanding of their central message or lesson.
01.R.RL.03: Describe characters, settings, and major events in a story, using key details.
01.R.RL.CL2 Craft and Structure
01.R.RL.04: Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
01.R.RL.05: Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.
01.R.RL.06: Identify who is telling the story at various points in a text.
01.R.RL.CL3 Integration of Knowledge and Ideas
01.R.RL.07: Refer to pictures, illustrations, and details in a story to describe characters, setting, or events.
(Not applicable to literature)
01.R.RL.09: Compare and contrast the adventures and experiences ofd characters in stories.
01.R.RL.CL4 Range of Reading and Level of Text Complexity
01.R.RL.10: With prompting and support, read appropriately complex prose and poetry for grade 1.

RI: Reading Standards for Informational Text
01.R.RI.CL1 Key Ideas and Details
01.R.RI.01: Ask and answer questions about key details in a text.
01.R.RI.02: Identify the main topic and retell key details of a text.
01.R.RI.03: Describe the connection between two individuals, events, ideas, or pieces of information in a text.
01.R.RI.CL2 Craft and Structure
01.R.RI.04: Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
01.R.RI.05: Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
01.R.RI.06: Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
01.R.RI.CL3 Integration of Knowledge and Ideas
01.R.RI.07: Use pictures, illustrations, and details in a text to describe its key ideas.
01.R.RI.08: Identify the reasons an author gives to support points in a text.
01.R.RI.09: Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
01.R.RI.CL4 Range of Reading and Level of Text Complexity
01.R.RI.10: With prompting and support, read appropriately complex informational texts for grade 1.

RF: Foundational Skills: First Grade
01.R.RF.CL1 Print Concepts
01.R.RF.01: Demonstrate understanding of the organization and basic features of print. a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).
01.R.RF.CL2 Phonological Awareness
01.R.RF.02: Demonstrate understanding of spoken words, syllables, and sounds (phonemes). a. Distinguish long from short vowel sounds in spoken single-syllable words . b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends. c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words. d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).

01.R.RF.CL3 Phonics and Word Recognition
01.R.RF.03: Know and apply grade-level phonics and word analysis skills in decoding words. a. Know the spelling-sound correspondences for common consonant digraphs.(two letters that represent one sound). b. Decode regularly spelled one-syllable words. c. Know final *-e* and common vowel team conventions for representing long vowel sounds. d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word. e. Decode two-syllable words following basic patterns by breaking the words into syllables. f. Read words with inflectional endings. g. Recognize and read grade-appropriate irregularly spelled words.
01.R.RF.04: Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level text orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

SL: Speaking and Listening: First Grade
01.R.SL.CL1 Comprehension and Collaboration
01.R.SL.01: Participate in collaborative conversations about *grade 1 topics and texts* with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion). b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. c. Ask questions to clear up any confusion about the topics and texts under discussion.
01.R.SL.02: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
01.R.SL.03: Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
01.R.SL.CL2 Presentation of Knowledge and Ideas
01.R.SL.04: Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
01.R.SL.05: Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
01.R.SL.06: Produce complete sentences when appropriate to task and situation. (See standards 1–3 in Language, for specific expectations.)

LEVEL 2 Reading

RL: Reading Standards for Literature
02.R.RL.CL1 Key Ideas and Details
02.R.RL.01: Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text.
02.R.RL.02: Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
02.R.RL.03: Describe how characters in a story respond to major events and challenges.
02.R.RL.CL2 Craft and Structure
02.R.RL.04: Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.
02.R.RL.05: Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.
02.R.RL.06: Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud.
02.R.RL.CL3 Integration of Knowledge and Ideas
02.R.RL.07: Use information from illustrations, other visual elements (e.g., maps), and the words in a print or digital text to demonstrate understanding of the characters, setting, or plot.
(Not applicable to literature)
02.R.RL.09: Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.
02.R.RL.CL4 Range of Reading and Level of Text Complexity
02.R.RL.10: By the end of the year, read literature, including stories, poetry, and drama, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI: Reading Standards for Informational Text
02.R.RI.CL1 Key Ideas and Details
02.R.RI.01: Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text.
02.R.RI.02: Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
02.R.RI.03: Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
02.R.RI.CL2 Craft and Structure
02.R.RI.04: Determine the meaning of words and phrases in a text relevant to a *grade 2 topic or subject area*.
02.R.RI.05: Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text quickly and efficiently.
02.R.RI.06: Identify the main purpose of a text, including what the author wants to answer, explain, or describe.
02.R.RI.CL3 Integration of Knowledge and Ideas
02.R.RI.07: Explain how specific images and other illustrations contribute to and clarify a text (e.g., show how something works).
02.R.RI.08: Describe how reasons support specific points the author makes in a text.
02.R.RI.09: Compare and contrast the most important points presented by two texts on the same topic.
02.R.RI.CL4 Range of Reading and Level of Text Complexity
02.R.RI.10: By the end of year, read and comprehend informational texts, including historical, scientific and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RF: Foundational Skills: Second Grade
02.R.RF.CL1 Print Concepts
02.R.RF.01: Demonstrate understanding of the organization and basic features of print. a. Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).
02.R.RF.CL2 Phonological Awareness
02.R.RF.02: Demonstrate understanding of spoken words, syllables, and sounds (phonemes). a. Distinguish long from short vowel sounds in spoken single-syllable words . b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends. c. Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words. d. Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).
02.R.RF.CL3 Phonics and Word Recognition
02.R.RF.03: Know and apply grade-level phonics and word analysis skills in decoding words. a. Distinguish long and short vowels when reading regularly spelled one-syllable words. b. Know spelling sound correspondences for additional common vowel teams. c. Decode regularly spelled two-syllable words with long vowels. d. Decode words with common prefixes and suffixes. e. Identify words with inconsistent but common spelling-sound correspondences. f. Recognize and read grade-appropriate irregularly spelled words.
02.R.RF.04: Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level text orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

SL: Speaking and Listening: Second Grade
02.R.SL.CL1 Comprehension and Collaboration
02.R.SL.01: Participate in collaborative conversations about *grade 2 topics and texts* with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). b. Build on others' talk in conversations by linking their comments to the remarks of others. c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
02.R.SL.02: Recount or describe key ideas or details from written texts read aloud or information presented orally or through media.
02.R.SL.03: Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
02.R.SL.CL2 Presentation of Knowledge and Ideas
02.R.SL.04: Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
02.R.SL.05: Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
02.R.SL.06: Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See standards 1–3 in Language, for specific expectations.)

LEVEL 3 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
03.R.RL.CL1 Key Ideas and Details	03.R.RI.CL1 Key Ideas and Details
03.R.RL.01: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.	**03.R.RI.01:** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
03.R.RL.02: Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.	**03.R.RI.02:** Determine the main idea of a text; recount the key details and explain how they support the main idea.
03.R.RL.03: Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	**03.R.RI.03:** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
03.R.RL.CL2 Craft and Structure	03.R.RI.CL2 Craft and Structure
03.R.RL.04: Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language	**03.R.RI.04:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 3 topic or subject area*.
03.R.RL.05: Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as *chapter*, *scene*, and *stanza*; describe how each successive part builds on earlier sections.	**03.R.RI.05:** Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic quickly and efficiently.
03.R.RL.06: Distinguish their own point of view from that of the narrator or those of the characters.	**03.R.RI.06:** Distinguish their own point of view from that of the author of a text.
03.R.RL.CL3 Integration of Knowledge and Ideas	03.R.RI.CL3 Integration of Knowledge and Ideas
03.R.RL.07: Explain how specific images and illustrations contribute to or clarify a story (e.g., create mood, emphasize particular aspects of characters or settings).	**03.R.RI.07:** Use information gained from illustrations, other visual elements (e.g., maps, photographs), and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
(Not applicable to literature)	**03.R.RI.08:** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
03.R.RL.09: Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).	**03.R.RI.09:** Compare and contrast the most important points and key details presented in two texts on the same topic.
03.R.RL.CL4 Range of Reading and Level of Text Complexity	03.R.RI.CL4 Range of Reading and Level of Text Complexity
03.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 2–3 text complexity band independently and proficiently.	**03.R.RI.10:** By the end of the year, read and comprehend informational texts, including historical, scientific, and technical texts, in the grades 2–3 text complexity band independently and proficiently.

RF: Foundational Skills: Third Grade
03.R.RF.CL1 Phonics and Word Recognition
03.R.RF.03 Know and apply grade-level phonics and word analysis skills in decoding words. a. Identify and know the meaning of the most common prefixes and derivational suffixes. b. Decode words with common Latin suffixes. c. Decode multisyllable words. d. Read grade-appropriate irregularly spelled words
03.R.RF.CL1 Fluency
03.R.RF.04: Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

SL: Speaking and Listening: Third Grade
03.R.SL.CL1 Comprehension and Collaboration
03.R.SL.01: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly. a. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). b. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. c. Explain their own ideas and understanding in light of the discussion
03.R.SL.02: Identify the main ideas and supporting details of written texts read aloud or information presented graphically, orally, visually, or multimodally.
03.R.SL.03: Ask and answer questions about information from a speaker's, offering appropriate elaboration and detail.
03.R.SL.CL2 Presentation of Knowledge and Ideas
03.R.SL.04: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
03.R.SL.05: Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.
03.R.SL.06: Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See standards 1–3 in Language, for specific expectations.)

LEVEL 4 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
04.R.RL.CL1 Key Ideas and Details	04.R.RI.CL1 A: Key Ideas and Details
04.R.RL.01: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.	**04.R.RI.01:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
04.R.RL.02: Determine a theme of a story, drama, or poem from details in the text; summarize the text.	**04.R.RI.02:** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
04.R.RL.03: Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	**04.R.RI.03:** Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
04.R.RL.CL2 Craft and Structure	04.R.RI.CL2 Craft and Structure
04.R.RL.04: Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., *Herculean*), drawing on a wide reading of classic myths from a variety of cultures and periods.	**04.R.RI.04:** Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.
04.R.RL.05: Explain major differences between poems, drama, and prose, and refer to the core structural elements of poems (e.g., stanza, verse, rhythm, meter) and drama (e.g., casts of characters, setting descriptions, dialogue, acts, scenes, stage directions) when writing or speaking about a text.	**04.R.RI.05:** Describe the overall structure of events, ideas, concepts, or information (e.g., chronology, comparison, cause/effect) in a text or part of a text.
04.R.RL.06: Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	**04.R.RI.06:** Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
04.R.RL.CL3 Integration of Knowledge and Ideas	04.R.RI.CL3 Integration of Knowledge and Ideas
04.R.RL.07: Integrate information gained from illustrations and other visual elements in a text with the words to demonstrate understanding of how the characters, setting, and plot interact and develop.	**04.R.RI.07:** Interpret factual information presented graphically or visually (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to understanding the text in which they appear.
(Not applicable to literature)	**04.R.RI.08:** Explain how an author uses reasons and evidence to support particular points in a text.
04.R.RL.09: Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.	**04.R.RI.09:** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably
04.R.RL.CL4 Range of Reading and Level of Text Complexity	04.R.RI.CL4 Range of Reading and Level of Text Complexity
04.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas,	**04.R.RI.10:** By the end of year, read and comprehend informational texts, including

and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.	historical, scientific, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as necessary at the high end of the range.

RF: Foundational Skills: Fourth Grade
04.R.RF.CL1 Phonics and Word Recognition
04.R.RF.03: Know and apply grade-level phonics and word analysis skills in decoding words. a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context.
04.R.RF.CL2 Fluency
04.R.RF.04: Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

SL: Speaking and Listening: Fourth Grade
04.R.SL.CL1 Comprehension and Collaboration
04.R.SL.01: Engage effectively in range of collaborative discussions (one-on-one and in groups) on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussions. b. Follow agreed-upon rules for discussions and carry out assigned roles. c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.
04.R.SL.02: Paraphrase portions of written texts read aloud or information presented graphically, orally, visually, or multimodally.
04.R.SL.03: Identify the reasons and evidence a speaker provides to support particular points.
04.R.SL.CL2 B: Presentation of Knowledge and Ideas
04.R.SL.04: Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
04.R.SL.05: Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
04.R.SL.06: Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See standards 1–3 in Language, for specific expectations).

LEVEL 5 Reading

RL:: Reading Standards for Literature
05.R.RL.CL1 Key Ideas and Details
05.R.RL.01: Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
05.R.RL.02: Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
05.R.RL.03: Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).
05.R.RL.CL2 Craft and Structure
05.R.RL.04: Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
05.R.RL.05: Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
05.R.RL.06: Describe how a narrator's or speaker's point of view influences how events are described.
05.R.RL.CL3 Integration of Knowledge and Ideas
05.R.RL.07: Analyze how visual and multimedia elements in conjunction with words contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction).
(Not applicable to literature)
05.R.RL.09: Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.
05.R.RL.CL4 Range of Reading and Level of Text Complexity
05.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band independently and proficiently.

RI: Reading Standards for Informational Text
05.R.RI.CL1 Key Ideas and Details
05.R.RI.01 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
05.R.RI.02: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
05.R.RI.03: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
05.R.RI.CL2 Craft and Structure
05.R.RI.04: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area*.
05.R.RI.05: Compare and contrast the organizational structure of events, ideas, concepts, or information (e.g., chronology, comparison, cause/effect, problem/solution) in two or more texts.
05.R.RI.06: Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
05.R.RI.CL3 Integration of Knowledge and Ideas
05.R.RI.07: Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
05.R.RI.08: Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence supports which point(s).
05.R.RI.09: Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
05.R.RI.CL4 Range of Reading and Level of Text Complexity
05.R.RI.10: By the end of the year, read and comprehend informational text, including historical, scientific, and technical texts, in the grades 4–5 text complexity band level independently and proficiently.

RF: Foundational Skills: Fifth Grade
05.R.RF.CL1 Print Concepts
None at this Grade Level
05.R.RF.CL2 Phonological Awareness
None at this Grade Level
05.R.RF.CL3 Phonics and Word Recognition
05.R.RF.03: Know and apply grade-level phonics and word analysis skills in decoding words. a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multi-syllabic words in context and out of context.
05.R.RF.CL4 Fluency
05.R.RF.04: Read with sufficient accuracy and fluency to support comprehension. a. Read on-level text with purpose and understanding. b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression. c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

SL: Speaking and Listening: Fifth Grade
05.R.SL.CL1 Comprehension and Collaboration
05.R.SL.01: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. b. Follow agreed-upon rules for discussions and carry out assigned roles. c. Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others. d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
05.R.SL.02: Summarize written texts read aloud or information presented graphically, orally, visually, or multimodally.
05.R.SL.03: Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.
05.R.SL.CL2 Presentation of Knowledge and Ideas
05.R.SL.04: Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
05.R.SL.05: Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
05.R.SL.06: Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation. (See standards 1–3 in Language, for specific expectations.)

LEVEL 6 Reading

RL.6: Reading Standards for Literature
06.R.RL.CL1 Key Ideas and Details
06.R.RL.01: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
06.R.RL.02: Determine a theme or central idea of a text and analyze its development over the course of the text; summarize the text.
06.R.RL.03: Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.
06.R.RL.CL2 Craft and Structure
06.R.RL.04: Determine the meaning of words and phrases as they are used in a text, including figures of speech and the connotations (associations) of particular words and phrases; analyze the impact of a specific word choice on meaning and tone.
06.R.RL.05: Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.
06.R.RL.06: Explain how an author establishes and develops the point of view of the narrator or speaker in a text.
06.R.RL.CL3 Integration of Knowledge and Ideas
06.R.RL.07: Compare and contrast the experience of reading a story, poem, or dram to listening to or viewing an audio, video, or live version of the text, including contrasting what they see and hear when reading the text to what they perceive when they listen or watch.
(Not applicable to literature)
06.R.RL.09: Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.
06.R.RL.CL4 Range of Reading and Level of Text Complexity
06.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band

RI: Reading Standards for Informational Text
06.R.RI.CL1 Key Ideas and Details
06.R.RI.01: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
06.R.RI.02: Determine a central idea of a text and analyze its development over the course of the text; summarize the text.
06.R.RI.03: Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).
06.R.RI.CL2 Craft and Structure
06.R.RI.04: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.
06.R.RI.05: Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.
06.R.RI.06: Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.
06.R.RI.CL3 Integration of Knowledge and Ideas
06.R.RI.07: Integrate information presented in different formats (e.g., print or digital text, video, multimedia) to develop a coherent understanding of a topic or issue.
06.R.RI.08: Delineate and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
06.R.RI.09: Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person).
06.R.RI.CL4 Range of Reading and Level of Text Complexity
06.R.RI.10: By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range

proficiently, with scaffolding as needed at the high end of the range.	

SL: Speaking and Listening: Sixth
06.R.SL.CL1 Comprehension and Collaboration
06.R.SL.01: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 6 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. With guidance and support from adults, work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
06.R.SL.02: Interpret information presented in graphical, oral, visual or multimodal formats and explain how it contributes to a topic, text, or issue under study.
06.R.SL.03: Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
06.R.SL.CL2 Presentation of Knowledge and Ideas
06.R.SL.04: Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation
06.R.SL.05: Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.
06.R.SL.06: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See standards 1–3 in Language, for specific expectations.)

LEVEL 7 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
07.R.RL.CL1 Key Ideas and Details	07.R.RI.CL1 Key Ideas and Details
07.R.RL.01: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**07.R.RI.01:** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
07.R.RL.02: Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; summarize the text.	**07.R.RI.02:** Determine two or more central ideas in a text and analyze their development over the course of the text and their relationship to one another; summarize the text.
07.R.RL.03: Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).	**07.R.RI.03:** Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).
07.R.RL.CL2 Craft and Structure	07.R.RI.CL2 Craft and Structure
07.R.RL.04: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama.	**07.R.RI.04:** Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.
07.R.RL.05: Analyze how a drama's or poem's form or structure (e.g. sonnet, soliloquy) contributes to its meaning.	**07.R.RI.05:** Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.
07.R.RL.06: Analyze how an author establishes and contrasts the points of view of different characters or narrators in a text.	**07.R.RI.06:** Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her point of view from that of others.
07.R.RL.CL3 Integration of Knowledge and Ideas	07.R.RI.CL3 Integration of Knowledge and Ideas
07.R.RL.07: Compare and contrast a story, poem, or drama to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, camera focus and angles).	**07.R.RI.07:** Compare and contrast the experience of reading a text to experiencing an audio, video, or multimedia version of it, analyzing the text's portrayal in each medium (e.g., how the delivery of a speech affects the impact of the words).
(Not applicable to literature)	**07.R.RI.08:** Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is sufficient to support the claims.
07.R.RL.09: Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.	**07.R.RI.09:** Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts
07.R.RL.CL4 Range of Reading and Level of Text Complexity	07.R.RI.CL4 Range of Reading and Level of Text Complexity
07.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6–8 text complexity band	**07.R.RI.10:** By the end of the year, read and comprehend literary nonfiction in the grades 6–8

proficiently, with scaffolding as necessary at the high end of the range	text complexity band proficiently, with scaffolding as needed at the high end of the range.

SL: Speaking and Listening: Seventh Grade
07.R.SL.CL1 Comprehension and Collaboration
07.R.SL.01: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 7 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views and understanding.
07.R.SL.02: Analyze the main ideas and supporting details presented in graphical, oral, visual, or multimodal formats and explain how the ideas clarify a topic, text, or issue under study.
07.R.SL.03: Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance of the evidence.
07.R.SL.CL2 Presentation of Knowledge and Ideas
07.R.SL.04: Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
07.R.SL.05: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
07.R.SL.06: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See standards 1–3 in Language, for specific expectations.)

LEVEL 8 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
08.R.RL.CL1 Key Ideas and Details	08.R.RI.CL1 Key Ideas and Details
08.R.RL.01: Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	**08.R.RI.01:** Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
08.R.RL.02: Determine a theme or central idea of a text and analyze its development over the course of the text, including how it is conveyed through particular details; provide an accurate summary of the text distinct from personal opinions or judgments.	**08.R.RI.02:** Determine a central idea of a text and analyze its development over the course of the text, including how it is conveyed through particular details; provide an accurate summary of the text distinct from personal opinions or judgments.
08.R.RL.03: Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.	**08.R.RI.03:** Analyze how a text makes connections among and distinctions between key individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
08.R.RL.CL2 Craft and Structure	08.R.RI.CL2 Craft and Structure
08.R.RL.04: Determine the meaning of words and phrases as they are used in a text, including analogies or allusions to other texts; analyze the impact of specific word choices on meaning and tone.	**08.R.RI.04:** Determine the meaning of words and phrases as they are used in a text, including analogies or allusions to other texts; analyze the impact of specific word choices on meaning and tone.
08.R.RL.05: Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.	**08.R.RI.05:** Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.
08.R.RL.06: Explain how differences in the point of view of characters and the audience or reader (e.g., created through the use of dramatic irony) creates such effects as suspense or humor.	**08.R.RI.06:** Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.
08.R.RL.CL3 Integration of Knowledge and Ideas	08.R.RI.CL3 Integration of Knowledge and Ideas
08.R.RL.07: Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.	**08.R.RI.07:** Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.
(Not applicable to literature)	**08.R.RI.08:** Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient and identifying when irrelevant evidence is introduced.
08.R.RL.9: Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.	**08.R.RI.09:** Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.
08.R.RL.CL4 Range of Reading and Level of Text Complexity	08.R.RI.CL4 Range of Reading and Level of Text Complexity
08.R.RL.10: By the end of the year, read and comprehend literature, including stories, dramas,	**08.R.RI.10:** By the end of the year, read and comprehend literary nonfiction in the grades 6–8

and poems, in the grades 6–8 text complexity band independently and proficiently.	text complexity band independently and proficiently.

SL: Speaking and Listening: Eighth Grade
08.R.SL.CL1 Comprehension and Collaboration
08.R.SL.01: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 8 topics*, *texts*, *and issues*, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Work with peers to set rules for collegial discussions, clear goals and deadlines, and individual roles as needed. c. Pose questions that connect the ideas of several speakers and elicit elaboration, and respond to others' questions and comments with relevant evidence, observations, and ideas. d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views and understanding in light of the evidence presented.
08.R.SL.02: Determine the purpose of information in graphical, oral, visual, or multimodal formats and evaluate the motives (e.g., social, commercial, political) behind its presentation.
08.R.SL.03: Delineate a speaker's argument and specific claims, evaluating the validity of the reasoning and sufficiency of the evidence.
08.R.SL.CL2 Presentation of Knowledge and Ideas
08.R.SL.04: Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
08.R.SL.05: Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.
08.R.SL.06: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See standards 1–3 in Language, pages for specific expectations.)

LEVELS 9 & 10 Reading

RL: Reading Standards for Literature	RI: Reading Standards for Informational Text
09-10.R.RL.CL1 Key Ideas and Details	09-10.R.RI.CL1 A: Key Ideas and Details
09-10.R.RL.01 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	**09-10.R.RI.01**: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
09-10.R.RL.02: Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.	**09-10.R.RI.02**: Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
09-10.R.RL.03: Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	**09-10.R.RI.03**: Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
09-10.R.RL.CL2 Craft and Structure	09-10.R.RI.CL2 Craft and Structure
09-10.R.RL.04: Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).	**09-10.R.RI.04**: Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
09-10.R.RL.05: Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.	**09-10.R.RI.05**: Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).
09-10.R.RL.06: Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.	**09-10.R.RI.06**: Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.
09-10.R.RL.CL3 Integration of Knowledge and Ideas	09-10.R.RI.CL3 Integration of Knowledge and Ideas
09-10.R.RL.07: Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).	**09-10.R.RI.07**: Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.
(Not applicable to literature)	**09-10.R.RI.08**: Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.
09-10.R.RL.09: Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from	**09-10.R.RI.09**: Analyze seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg

Ovid or the Bible or how a later author draws on a play by Shakespeare).	Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail"), including how they address related themes and concepts.
09-10.R.RL.CL4 Range of Reading and Level of Text Complexity	09-10.R.RI.CL4 Range of Reading and Level of Text Complexity
09-10.R.RL.10: By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.	**09-10.R.RI.10**: By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.

SL: Speaking and Listening: Grades 9-10
09-10.R.SL.CL1 Comprehension and Collaboration
09-10.R.SL.01:Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.
09-10.R.SL.02: Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
09-10.R.SL.03: Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.
09-10.R.SL.CL2 Presentation of Knowledge and Ideas
09-10.R.SL.04:Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
09-10.R.SL.05: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
09-10.R.SL.06: Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9-10 Language standards 1 and 3 for specific expectations.)

LEVELS 11 & 12 Reading

There is no LPSD End of Level Assessment for Reading Levels 11 and 12.

RL: Reading Standards for Literature
11-12.R.RL.CL1 Key Ideas and Details
11-12.R.RL.01: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
11-12.R.RL.02: Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.
11-12.R.RL.03: Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).
11-12.R.RL.CL2 Craft and Structure
11-12.R.RL.04: Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)
11-12.R.RL.05: Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.
11-12.R.RL.06: Analyze a case in which grasping a point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).
11-12.R.RL.CL3 Integration of Knowledge and Ideas
11-12.R.RL.07: Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.)

RI: Reading Standards for Informational Text
11-12.R.RI.CL1 A: Key Ideas and Details
11-12.R.RI.01: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
11-12.R.RI.02: Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.
11-12.R.RI.03: Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
11-12.R.RI.CL2 Craft and Structure
11-12.R.RI.04: Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
11-12.R.RI.05: Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.
11-12.R.RI.06: Determine an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness or beauty of the text.
11-12.R.RI.CL3 Integration of Knowledge and Ideas
11-12.R.RI.07: Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

(Not applicable to literature)	**11-12.R.RI.08**: Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., *The Federalist*, presidential addresses).
11-12.R.RL.09: Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.	**11-12.R.RI.09**: Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including The Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address) for their themes, purposes, and rhetorical features.
11-12.R.RL.CL4 Range of Reading and Level of Text Complexity	11-12.R.RI.CL4 Range of Reading and Level of Text Complexity
11-12.R.RL.10: By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.	**11-12.R.RI.10**: By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

SL: Speaking and Listening: Grades 11-12
11-12.R.SL.CL1 Comprehension and Collaboration
11-12.R.SL.01: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.
11-12.R.SL.02: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
11-12.R.SL.03: Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.
11-12.R.SL.CL2 Presentation of Knowledge and Ideas
11-12.R.SL.04: Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

11-12.R.SL.05: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
11-12.R.SL.06: Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grades 11-12 Language standards 1 and 3 or specific expectations.)

Beginning in grade 3, skills and understandings that are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking are marked with an asterisk (*).

LPSD WRITING STANDARDS

Level 0 Writing

W: Writing Standards: Kindergarten
00.W.WR.CL1 Text Types and Purposes
00.W.WR.01: Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is . . .*).
00.W.WR.02: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
00.W.WR.03: Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
00.W.WR.CL2 Production and Distribution of Writing
(Begins in grade 3)
00.W.WR.05: With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.
00.W.WR.06: With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers.
00.W.WR.CL3 Research to Build and Present Knowledge
00.W.WR.07: Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them).
00.W.WR.08: With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
(Begins in grade 4)
Range of Writing
(Begins in grade 3)

L: Language Standards: Kindergarten
00.W.L.CL1 Conventions of Standard English
00.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Print many upper- and lowercase letters. b) Use frequently occurring nouns and verbs. c) Form regular plural nouns orally by adding /s/ or /es/ (e.g., *dog*, *dogs*; *wish*, *wishes*). d) Understand and use question words (interrogatives) (e.g., *who*, *what*, *where*, *when*, *why*, *how*). e) Use the most frequently occurring prepositions (e.g., *to*, *from*, *in*, *out*, *on*, *off*, *for*, *of*, *by*, *with*). f) Produce and expand complete sentences in shared language activities.
00.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Capitalize the first word in a sentence and the pronoun *I*. b) Recognize and name end punctuation. c) Write a letter or letters for most consonant and short-vowel sounds (phonemes). d) Spell simple words phonetically, drawing on knowledge of sound-letter relationships.
Knowledge of Language
(Begins in grade 2)
00.W.L.CL2 Vocabulary Acquisition and Use
00.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *kindergarten reading and content*. a) Identify new meanings for familiar words and apply them accurately (e.g., knowing *duck* as a bird and learning the verb *to duck*).

b) Use the most frequently occurring inflections and affixes (e.g., *-ed*, *-s*, *re-*, *un-*, *pre-*, *-ful*, *-less*) as a clue to the meaning of an unknown word.
00.W.L.05: With guidance and support from adults, explore word relationships and nuances in word meanings. a) Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent. b) Demonstrate understanding of frequently occurring verbs and adjectives by relating them to their opposites (antonyms). c) Identify real-life connections between words and their use (e.g., note places at school that are *colorful*). d) Distinguish shades of meaning among verbs describing the same general action (e.g., *walk*, *march*, *strut*, *prance*) by acting out the meanings.
00.W.L.06: Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

LEVEL 1 Writing

W: Writing Standards: First Grade
01.W.WR.CL1 Text Types and Purposes
01.W.WR.01: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
01.W.WR.02: Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
01.W.WR.03: Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.
01.W.WR.CL2 Production and Distribution of Writing
(Begins in grade 3)
01.W.WR.05: With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.
01.W.WR.06: With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
01.W.WR.CL3 Research to Build and Present Knowledge
01.W.WR.07: Participate in shared research and writing projects (e.g., explore a number of ―how-to‖ books on a given topic and use them to write a sequence of instructions).
01.W.WR.08: With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
(Begins in grade 4)
D: Range of Writing
(Begins in grade 3)

L: Language Standards: First Grade
01.W.L.CL1 Conventions of Standard English
01.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Print all upper- and lowercase letters. b) Use common, proper, and possessive nouns. c) Use singular and plural nouns with matching verbs in basic sentences (e.g., *He hops*; *We hop*). d) Use personal, possessive, and indefinite pronouns (e.g., *I*, *me*, *my*; *they*, *them*, *their*, *anyone*, *everything*). e) Use verbs to convey a sense of past, present, and future (e.g., *Yesterday I walked home*; *Today I walk home*; *Tomorrow I will walk home*). f) Use frequently occurring adjectives. g) Use frequently occurring conjunctions (e.g., *and*, *but*, *or*, *so*, *because*). h) Use determiners (e.g., articles, demonstratives). i) Use frequently occurring prepositions (e.g., *during*, *beyond*, *toward*). j) Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to questions and prompts.
01.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Capitalize dates and names of people. b) Use end punctuation for sentences. c) Use commas in dates and to separate single words in a series. d) Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words. e) Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.
Knowledge of Language
(Begins in grade 2)

01.W.L.CL2 Vocabulary Acquisition and Use
01.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 1 reading and content*, choosing flexibly from an array of strategies. a) Use sentence-level context as a clue to the meaning of a word or phrase. b) Use frequently occurring affixes as a clue to the meaning of a word. c) Identify frequently occurring root words (e.g., *look*) and their inflectional forms (e.g., *looks*, *looked*, *looking*).
01.W.L.05: With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings. a) Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent. b) Define words by category and by one or more key attributes (e.g., a *duck* is a bird that swims; a *tiger* is a large cat with stripes). c) Identify real-life connections between words and their use (e.g., note places at home that are *cozy*). d) Distinguish shades of meaning among verbs differing in manner (e.g., *look*, *peek*, *glance*, *stare*, *glare*, *scowl*) and adjectives differing in intensity (e.g., *large*, *gigantic*) by defining or choosing them or by acting out the meanings.
01.W.L.06: Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using frequently occurring conjunctions to signal simple relationships (e.g., *because*).

LEVEL 2 Writing

W: Writing Standards: Second Grade
02.W.WR.CL1 Text Types and Purposes
02.W.WR.01: Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., *because*, *and*, *also*) to connect opinion and reasons, and provide a concluding statement or section.
02.W.WR.02: Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
02.W.WR.03: Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.
02.W.WR.CL2 Production and Distribution of Writing
(Begins in grade 3)
02.W.WR.05: With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
02.W.WR.06: With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
02.W.WR.CL3 Research to Build and Present Knowledge
02.W.WR.07: Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
02.W.WR.08: Recall information from experiences or gather information from provided sources to answer a question.

L: Language Standards: Second Grade
02.W.L.CL1 Conventions
02.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Use collective nouns (e.g., *group*). b) Form and use frequently occurring irregular plural nouns (e.g., *feet*, *children*, *teeth*, *mice*, *fish*). c) Use reflexive pronouns (e.g., *myself*, *ourselves*). d) Form and use the past tense of frequently occurring irregular verbs (e.g., *sat*, *hid*, *told*). e) Use adjectives and adverbs, and choose between them depending on what is to be modified. f) Produce, expand, and rearrange complete simple and compound sentences (e.g., *The boy watched the movie*; *The little boy watched the movie*; *The action movie was watched by the little boy*).
02.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Capitalize holidays, product names, and geographic names. b) Use commas in greetings and closings of letters. c) Use an apostrophe to form contractions and frequently occurring possessives. d) Generalize learned spelling patterns when writing words (e.g., *cage* → *badge*; *boy* → *boil*). e) Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.
02.W.L.CL2 Effective Language Use
(Begins in grade 3)
02.W.L.CL3 Vocabulary Acquisition and Usage
02.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 2 reading and content*, choosing flexibly from an array of strategies. a) Use sentence-level context as a clue to the meaning of a word or phrase. b) Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., *happy*/*unhappy*, *tell*/*retell*). c) Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *addition*, *additional*).

d) Use knowledge of the meaning of individual words to predict the meaning of compound words (e.g., *birdhouse*, *lighthouse*, *housefly*; *bookshelf*, *notebook*, *bookmark*). e) Use glossaries and beginning dictionaries, both print and digital, to determine or clarify the meaning of words and phrases.
02.W.L.05: Demonstrate understanding of word relationships and nuances in word meanings. a) Identify real-life connections between words and their use (e.g., describe foods tha*t are spicy* or *juicy*). b) Distinguish shades of meaning among closely related verbs (e.g., *toss*, *throw*, *hurl*) and closely related adjectives (e.g., *thin*, *slender*, *skinny, scrawny*).
02.W.L.06: Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., *When other kids are happy that makes me happy*).

LEVEL 3 Writing

W:Writing Standards: Third Grade
03.W.WR.CL1 Text Types and Purposes
03.W.WR.01: Write opinion pieces on familiar topics or texts, supporting a point of view with reasons. • Introduce the topic or book they are writing about, state an opinion, and create an organizational structure that lists reasons. • Provide reasons that support the opinion. • Use linking words and phrases (e.g., *because*, *therefore*, *since*, *for example*) to connect opinion and reasons. • Provide a concluding statement or section.
03.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas and information clearly. • Introduce a topic and group related information together; include illustrations when useful to aiding comprehension. • Develop the topic with facts, definitions, and details. • Use linking words and phrases (e.g., *also*, *another*, *and*, *more*, *but*) to connect ideas within categories of information. • Provide a concluding statement or section.
03.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. • Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. • Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. • Use temporal words and phrases to signal event order. • Provide a sense of closure.
03.W.WR.CL2 Production and Distribution of Writing
03.W.WR.04: With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above).
03.W.WR.05: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
03.W.WR.06: With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.
03.W.WR.CL3 Research to Build Knowledge
03.W.WR.07: Conduct short research projects that build knowledge about a topic.
03.W.WR.08: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
(Begins in grade 4)
03.W.WR.CL4 Range of Writing
03.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: Third Grade
03.W.L.CL1 Conventions
03.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in

particular sentences.
b) Form and use regular and irregular plural nouns.
c) Use abstract nouns (e.g., *childhood*).
d) Form and use regular and irregular verbs.
e) Form and use the simple (e.g., *I walked*; *I walk*; *I will walk*) verb tenses.
f) Ensure subject-verb and pronoun-antecedent agreement.*
g) Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.
h) Use coordinating and subordinating conjunctions.
i) Produce simple, compound, and complex sentences.

03.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing.
a) Capitalize important words in titles.
b) Use commas in addresses.
c) Use commas and quotation marks in dialogue.
d) Form and use possessives.
e) Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., *sitting*, *smiled*, *cries*, *happiness*).
f) Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.
g) Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

03.W.L.CL2 Effective Language Use

03.W.L.03: Use language to achieve particular effects when writing or speaking.
a) Choose words and phrases for effect.*
b) Recognize and observe differences between the conventions of spoken and written standard English.

03.W.L.CL3 Vocabulary Acquisition and Usage

03.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on *grade 3 reading and content*, choosing flexibly from a range of strategies.
a) Use sentence-level context as a clue to the meaning of a word or phrase.
b) Determine the meaning of the new word formed when a known affix is added to a known word (e.g., *agreeable*/*disagreeable*, *comfortable*/*uncomfortable*, *care*/*careless*, *heat*/*preheat*).
c) Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., *company*, *companion*).
c) Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.

03.W.L.05: Demonstrate understanding of word relationships *a*nd nuances in word meanings.
a) Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., *take steps*).
d) Identify real-life connections between words and their use (e.g., describe people who are *friendly* or *helpful*).
e) Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., *knew*, *believed*, *suspected*, *heard*, *wondered*).

03.W.L.06: Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific vocabulary, including words and phrases that signal spatial and temporal relationships (e.g., *After dinner that night we went looking for them*).

LEVEL 4 Writing

W: Writing Standards: Fourth Grade
04.W.WR.CL1 Text Types and Purposes
04.W.WR.01: Write opinion pieces on topics or texts, supporting a point of view with reasons and information. a) Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose. b) Provide reasons that are supported by facts and details. c) Link opinion and reasons using words and phrases (e.g., *for instance*, *in order to, in addition*). d) Provide a concluding statement or section related to the opinion presented
04.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a) Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b) Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c) Link ideas within categories of information using words and phrases (e.g., *another*, *for example*, *also*, *because*). d) Use precise language and domain-specific vocabulary to inform about or explain the topic. e) Provide a concluding statement or section related to the information or explanation presented.
04.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a) Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b) Use dialogue and description to develop experiences and events or show the responses of characters to situations. c) Use a variety of transitional words and phrases to manage the sequence of events. d) Use concrete words and phrases and sensory details to convey experiences and events precisely. e) Provide a conclusion that follows from the narrated experiences or events.
04.W.WR.CL2 Production and Distribution of Writing
04.W.WR.04: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
04.W.WR.05: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
04.W.WR.06: With some guidance and support from adults, use technology, including the Internet, to produce and publish writing (using the keyboard) as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
04.W.WR.CL3 Research to Build Knowledge
04.W.WR.07: Conduct short research projects that build knowledge through investigation of different aspects of a topic.
04.W.WR.08: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
04.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply *grade 4 Reading standards* to literature (e.g., ―Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text). b. Apply *grade 4 Reading standard*s to informational texts (e.g., ―Explain how an author uses reasons and evidence to support particular points in a text).
04.W.WR.CL4 Range of Writing

04.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: Fourth Grade
04.W.L.CL1 Conventions
04.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Use relative pronouns (*who*, *whose*, *whom*, *which*, *that*) and relative adverbs (*where*, *when*, *why*). b) Form and use the progressive (e.g., *I was walking*; *I am walking*; *I will be walking*) verb aspects. c) Use modal auxiliaries (e.g., *can*, *may*, *must*) to convey various conditions. d) Order adjectives within sentences according to conventional patterns (e.g., *a small red bag* rather than *a red small bag*). e) Form and use prepositional phrases. f) Produce complete sentences, recognizing and correcting rhetorically poor fragments and run-ons.* g) Correctly use frequently confused words (e.g., *to*, *too*, *two*; *there*, *their*).*
04.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Use correct capitalization. b) Use commas and quotation marks to mark direct speech and quotations from a text. c) Use a comma before a coordinating conjunction in a compound sentence. d) Spell grade-appropriate words correctly, consulting references as needed.
04.W.L.CL2 Effective Language Use
04.W.L.03 Use language to enhance meaning and achieve particular effects when writing or speaking. a) Choose words and phrases to convey ideas precisely.* b) Use punctuation for effect.* c) Differentiate between contexts that call for formal English (e.g. presenting ideas) and situations where informal discourse is appropriate (e.g. small group discussion).
04.W.L.CL3 Vocabulary Acquisition and Usage
04.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 4 reading and content*, choosing flexibly from a range of strategies. a) Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. b) Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *telegraph*, *photograph*, *autograph*). c) Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
04.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a) Explain the meaning of simple similes and metaphors (e.g., *as pretty as a picture*) in context. b) Recognize and explain the meaning of common idioms, adages, and proverbs. c) Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).
04.W.L.06: Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal precise actions, emotions, or states of being (e.g., *quizzed*, *whined*, *stammered*) and words and phrases basic to a particular topic (e.g., *wildlife*, *conservation*, and *endangered* when discussing animal preservation).

LEVEL 5 Writing

W: Writing Standards: Fifth Grade
05.W.WR.CL1 Text Types and Purposes
05.W.WR.01: Write opinion pieces on topics or texts, supporting a point of view with reasons and information. a) Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose. b) Provide logically ordered reasons that are supported by facts and details. c) Link opinion and reasons using words, phrases, and clauses (e.g., *consequently*, *specifically*). d) Provide a concluding statement or section related to the opinion presented.
05.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas and information clearly. a) Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. b) Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic. c) Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*). d) Use precise language and domain-specific vocabulary to inform about or explain the topic. e) Provide a concluding statement or section related to the information or explanation presented.
05.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. a) Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. b) Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations. c) Use a variety of transitional words, phrases, and clauses to manage the sequence of events. d) Use concrete words and phrases and sensory details to convey experiences and events precisely. e) Provide a conclusion that follows from the narrated experiences or events.
05.W.WR.CL2 Production and Distribution of Writing
05.W.WR.04: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in #1–3 above.)
05.W.WR.05: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
05.W.WR.06: With some guidance and support from adults, use technology, including the Internet, to produce and publish a minimum of two pages of writing (using the keyboard) as well as to interact and collaborate with others.
05.W.WR.CL3 Research to Build Knowledge
05.W.WR.07: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.
05.W.WR.08: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.
05.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research. a) Apply *grade 5 Reading standards* to literature (e.g., ―Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the text‖). b) Apply *grade 5 Reading standards* to informational texts (e.g., ―Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence supports which point[s]).
05.W.WR.CL4 Range of Writing

05.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: Fifth Grade
05.W.L.CL1 Conventions
05.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences. b) Form and use the perfect (e.g., *I had walked*; *I have walked*; *I will have walked*) verb aspects. c) Use verb tense and aspect to convey various times, sequences, states, and conditions. d) Recognize and correct inappropriate shifts in verb tense and aspect.* e) Use correlative conjunctions.
05.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Use punctuation to separate items in a series.* b) Use a comma to separate an introductory element from the rest of the sentence. c) Use a comma to set off the words *yes* and *no* (e.g., *Yes, thank you*), to set off a tag question from the rest of the sentence (e.g., *It's true, isn't it?*), and to indicate direct address (e.g., *Is that you, Steve?*). d) Use underlining, quotation marks, or italics to indicate titles of works. e) Spell grade-appropriate words correctly, consulting references as needed.
05.W.L.CL2 Effective Language Use
05.W.L.03: Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a) Expand, combine, and reduce sentences for meaning, reader/listener interest, and style. b) Compare and contrast the varieties of English (e.g. dialects, registers) used in stories, dramas, or poems.
05.W.L.CL3 Vocabulary Acquisition and Usage
05.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 5 reading and content*, choosing flexibly from a range of strategies. a) Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase. b) Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., *photograph*, *photosynthesis*). c) Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
05.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a) Interpret figurative language, including similes and metaphors, in context. b) Recognize and explain the meaning of common idioms, adages, and proverbs. c) Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.
05.W.L.06: Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal contrast, addition, and other logical relationships (e.g., *however*, *although*, *nevertheless*, *similarly*, *moreover*, *in addition*).

LEVEL 6 Writing

W: Writing Standards: Sixth
06.W.WR.CL1 Text Types and Purposes
06.W.WR.01: Write arguments to support claims with clear reasons and relevant evidence. a) Introduce claim(s) and organize the reasons and evidence clearly. b) Support claim(s) with clear reasons and relevant evidence, demonstrating an understanding of the topic or text. c) Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons. d) Establish and maintain a formal style. e) Provide a concluding statement or section that follows from the argument presented
06.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a) Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b) Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. c) Use appropriate transitions to clarify the relationships among ideas and concepts. d) Use precise language and domain-specific vocabulary to inform about or explain the topic. e) Establish and maintain a formal style. f) Provide a concluding statement or section that follows from the information or explanation presented.
06.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a) Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b) Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. c) Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. d) Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e) Provide a conclusion that follows from the narrated experiences or events.
06.W.WR.CL2 Production and Distribution of Writing
06.W.WR.04: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
06.W.WR.05: With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
06.W.WR.06: Use technology, including the Internet, to produce and publish a minimum of three pages of writing as well as to interact and collaborate with others.
06.W.WR.CL3 Research to Build Knowledge
06.W.WR.07: Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate
06.W.WR.08: Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources
06.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research. a) Apply *grade 6 Reading standards* to literature (e.g., ―Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar

themes and topics).
b) Apply *grade 6 Reading standards* to literary nonfiction (e.g., ―Delineate and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not).

06.W.WR.CL4 Range of Writing

06.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: Sixth

06.W.L.CL1 Conventions

06.W.L.01: Observe conventions of grammar and usage when writing or speaking.
a) Ensure that pronouns are in the proper case (subjective, objective, possessive).
b) Use intensive pronouns (e.g., *myself*, *ourselves*).
c) Recognize and correct inappropriate shifts in pronoun number and person.*
d) Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*
e) Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.*

06.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing.
a) Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.*
b) Spell correctly.

06.W.L.CL2 Effective Language Use

06.W.L.03: Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking.
a) Vary sentence patterns for meaning, reader/listener interest, and style.*
b) Maintain consistency in style and tone.*

06.W.L.CL3 Vocabulary Acquisition and Usage

06.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 6 reading and content*, choosing flexibly from a range of strategies.
a) Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
c) Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *audience*, *auditory*, *audible*).
d) Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
e) Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

06.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
a) Interpret figures of speech (e.g., personification) in context.
b) Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.
c) Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *stingy*, *scrimping*, *economical*, *unwasteful*, *thrifty*).

06.W.L.06: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

LEVEL 7 Writing

W: Writing Standards: Seventh Grade
07.W.WR.CL1 Text Types and Purposes
07.W.WR.01: Write arguments to support claims with clear reasons and relevant evidence. a) Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. b) Support claim(s) with logical reasoning and relevant evidence, demonstrating an understanding of the topic or text. c) Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence. d) Establish and maintain a formal style. e) Provide a concluding statement or section that follows from and supports the argument presented
07.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a) Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b) Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples. c) Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts. d) Use precise language and domain-specific vocabulary to inform about or explain the topic. e) Establish and maintain a formal style. f) Provide a concluding statement or section that follows from and supports the information or explanation presented
07.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. f) Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. g) Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. h) Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another. i) Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. j) Provide a conclusion that follows from and reflects on the narrated experiences or events.
07.W.WR.CL2 Production and Distribution of Writing
07.W.WR.04: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
07.W.WR.05: With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
07.W.WR.06: Use technology, including the Internet, to produce and publish a minimum of four pages of writing as well as to interact and collaborate with others.
07.W.WR.CL3 Research to Build Knowledge
07.W.WR.07: Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.

07.W.WR.08: Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

07.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research.

a) Apply *grade 7 Reading standards* to literature (e.g., ―Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history]).

b) Apply *grade 7 Reading standards* to literary nonfiction (e.g., ―Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is sufficient to support the claims‖).

07.W.WR.CL4 Range of Writing

07.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: : Seventh Grade

07.W.L.CL1 Conventions

07.W.L.01: Observe conventions of grammar and usage when writing or speaking.

a) Explain the function of phrases and clauses in general and their function in specific sentences.

b) Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.

c) Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.*

07.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing.

a) Use a comma to separate coordinate adjectives (e.g., *It was a fascinating, enjoyable movie* but not *He wore an old[,] green shirt*).

b) Spell correctly.

07.W.L.03: Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking.

a) Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.*

07.W.L.CL2 Vocabulary Acquisition and Usage

07.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 7 reading and content*, choosing flexibly from a range of strategies.

a) Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

b) Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *belligerent*, *bellicose*, *rebel*).

c) Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.

d) Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

07.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

a) Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context.

b) Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.

c) Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *refined*, *respectful*, *polite*, *diplomatic*, *condescending*).

07.W.L.06: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

LEVEL 8 Writing

W: Writing Standards: Eighth Grade
08.W.WR.CL1 Text Types and Purposes
08.W.WR.01: Write arguments to support claims with clear reasons and relevant evidence. a) Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b) Support claim(s) with logical reasoning and relevant evidence, using credible sources and demonstrating an understanding of the topic or text. c) Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d) Establish and maintain a formal style. f) Provide a concluding statement or section that follows from and supports the argument presented.
08.W.WR.02: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a) Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b) Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples. c) Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. d) Use precise language and domain-specific vocabulary to inform about or explain the topic. e) Establish and maintain a formal style. f) Provide a concluding statement or section that follows from and supports the information or explanation presented.
08.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences. a) Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. b) Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters. c) Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events. d) Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. e) Provide a conclusion that follows from and reflects on the narrated experiences or events.
08.W.WR.CL2 Production and Distribution of Writing
08.W.WR.04: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
08.W.WR.05: With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.
08.W.WR.06: Use technology, including the Internet, to produce and publish a minimum of five pages of writing as well as to interact and collaborate with others.
08.W.WR.CL3 Research to Build and Present Knowledge
08.W.WR.07: Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

08.W.WR.08: Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
08.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research. a) Apply *grade 8 Reading standards* to literature (e.g., ―Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new). b) Apply *grade 8 Reading standards* to literary nonfiction (e.g., ―Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient and identifying when irrelevant evidence is introduce).
08.W.WR.CL4 Range of Writing
08.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

L: Language Standards: Eighth Grade
08.W.L.CL1 Conventions in Writing and Speaking
08.W.L.01: Observe conventions of grammar and usage when writing or speaking. a) Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences. b) Form and use verbs in the active and passive voice. c) Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood. d) Recognize and correct inappropriate shifts in verb voice and mood.*
08.W.L.02: Observe conventions of capitalization, punctuation, and spelling when writing. a) Use punctuation (comma, ellipsis, dash) to indicate a pause or break. b) Use an ellipsis to indicate an omission. c) Spell correctly
08.W.L.CL2 Effective Language Use
08.W.L.03: Use language to enhance meaning, convey style, and achieve particular effects when writing or speaking. a) Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).
08.W.L.CL3 Vocabulary Acquisition and Usage
08.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on *grade 8 reading and content*, choosing flexibly from a range of strategies. a) Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. b) Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *precede*, *recede*, *secede*). c) Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech. d) Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
08.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a) Interpret figures of speech (e.g. verbal irony, puns) in context. b) Use the relationship between particular words to better understand each of the words. c) Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *bullheaded*, *willful*, *firm*, *persistent*, *resolute*)

08.W.L.06: Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

LEVELS 9 & 10 Writing

W: Writing Standards: Grades 9-10
09-10.W.WR.CL1 Text Types and Purposes
09-10.W.WR.01:Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a) Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. b) Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns. c) Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the r elationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. d) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e) Provide a concluding statement or section that follows from and supports the argument presented.
09-10.W.WR.02: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a) Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b) Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c) Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d) Use precise language and domain-specific vocabulary to manage the complexity of the topic. e) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f) Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).
09-10.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. a) Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. b) Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. c) Use a variety of techniques to sequence events so that they build on one another to create a coherent whole. d) Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. e) Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.
09-10.W.WR.CL2 Production and Distribution of Writing
09-10.W.WR.04: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
09-10.W.WR.05: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

09-10.W.WR.06: Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
09-10.W.WR.CL3 Research to Build and Present Knowledge
09-10.W.WR.07: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
09-10.W.WR.08: Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
09-10.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research. a) Apply *grades 9–10 Reading standards* to literature (e.g., "Analyze how an author draws on and transforms source material in a specific work [e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare]"). b) Apply *grades 9–10 Reading standards* to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning").
09-10.W.WR.CL4 Range of Writing
09-10.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

L: Language Standards: Grades 9-10
09-10.W.L.CL1 Conventions
09-10.W.L.01: Demonstrate command of the conventions of standard English grammar and usage when writing/speaking. a) Use parallel structure.* b) Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.
09-10.W.L.02: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. a) Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. b) Use a colon to introduce a list or quotation. c) Spell correctly.
09-10.W.L.CL2 Effective Language Use
09-10.W.L.03: Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. a) Write and edit work so that it conforms to the guidelines in a style manual (e.g., *MLA Handbook*, Turabian's *Manual for Writers*) appropriate for the discipline and writing type.
09-10.W.L.CL3 Vocabulary Acquisition and Usage
09-10.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grades 9–10 reading and content*, choosing flexibly from a range of strategies. a) Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. b) Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., *analyze, analysis, analytical; advocate, advocacy*). c) Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print

and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. d) Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
09-10.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a) Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text. b) Analyze nuances in the meaning of words with similar denotations.
09-10.W.L.06: Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

LEVELS 11 & 12 Writing

W: Writing Standards: Grades 11-12
11-12.W.WR.CL1 Text Types and Purposes
11-12.W.WR.01: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. g) Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. h) Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases. i) Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. j) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. k) Provide a concluding statement or section that follows from and supports the argument presented.
11-12.W.WR.02: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. l) Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. m) Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. n) Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. o) Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic. p) Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. q) Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).
11-12.W.WR.03: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. r) Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events. s) Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters. t) Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). u) Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters. v) Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.
11-12.W.WR.CL2 Production and Distribution of Writing
11-12.W.WR.04: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.

11-12.W.WR.05: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

11-12.W.WR.06: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

11-12.W.WR.CL3 Research to Build and Present Knowledge

11-12.W.WR.07: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

11-12.W.WR.08: Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

11-12.W.WR.09: Draw evidence from literary or informational texts to support analysis, reflection, and research.

w) Apply g*rades 11–12 Reading standards* to literature (e.g., "Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics").

x) Apply *grades 11–12 Reading standards* to literary nonfiction (e.g., "Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents] and the premises, purposes, and arguments in works of public advocacy [e.g., *The Federalist*, presidential addresses]").

11-12.W.WR.CL4 Range of Writing

11-12.W.WR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes.

L: Language Standards: Grades 11-12

11-12.W.L.CL1 Conventions

11-12.W.L.01: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

y) Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.

z) Resolve issues of complex or contested usage, consulting references (e.g., *Merriam-Webster's Dictionary of English Usage, Garner's Modern American Usage*) as needed.

11-12.W.L.02: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

aa) Observe hyphenation conventions.

bb) Spell correctly.

11-12.W.L.CL2 Effective Language Use

11-12.W.L.03: Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

cc) Vary syntax for effect, consulting references (e.g., Tufte's *Artful Sentences*) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

11-12.W.L.CL3 Vocabulary Acquisition and Usage

11-12.W.L.04: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grades 11–12 reading and content*, choosing flexibly from a range of strategies.

dd) Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

ee) Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., *conceive, conception, conceivable*).

ff) Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage. gg) Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
11-12.W.L.05: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. hh) Interpret figures of speech (e.g., hyperbole, paradox) in context and analyze their role in the text. ii) Analyze nuances in the meaning of words with similar denotations.
11-12.W.L.06: Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Beginning in grade 3, skills and understandings that are particularly likely to require continued attention in higher grades as they are applied to increasingly sophisticated writing and speaking are marked with an asterisk (*).

HOW TO READ MATH STANDARDS

Each Math Level 0-8 begins with:

- A narrative explaining key components
- 8 mathematical practices (consistent across ALL levels)
- DOMAINS to be covered at this level and bulleted list of key skills (SUPER standards)

LEVEL 0

In LEVEL 0, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Level 0 should be devoted to number than to other topics.

1. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as 5 + 2 = 7 and 7 – 2 = 5. (Level 0 students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.
2. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

LEVEL 0 Overview

Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Number and Operations in Base Ten

- Work with numbers 11–19 to gain foundations for place value.

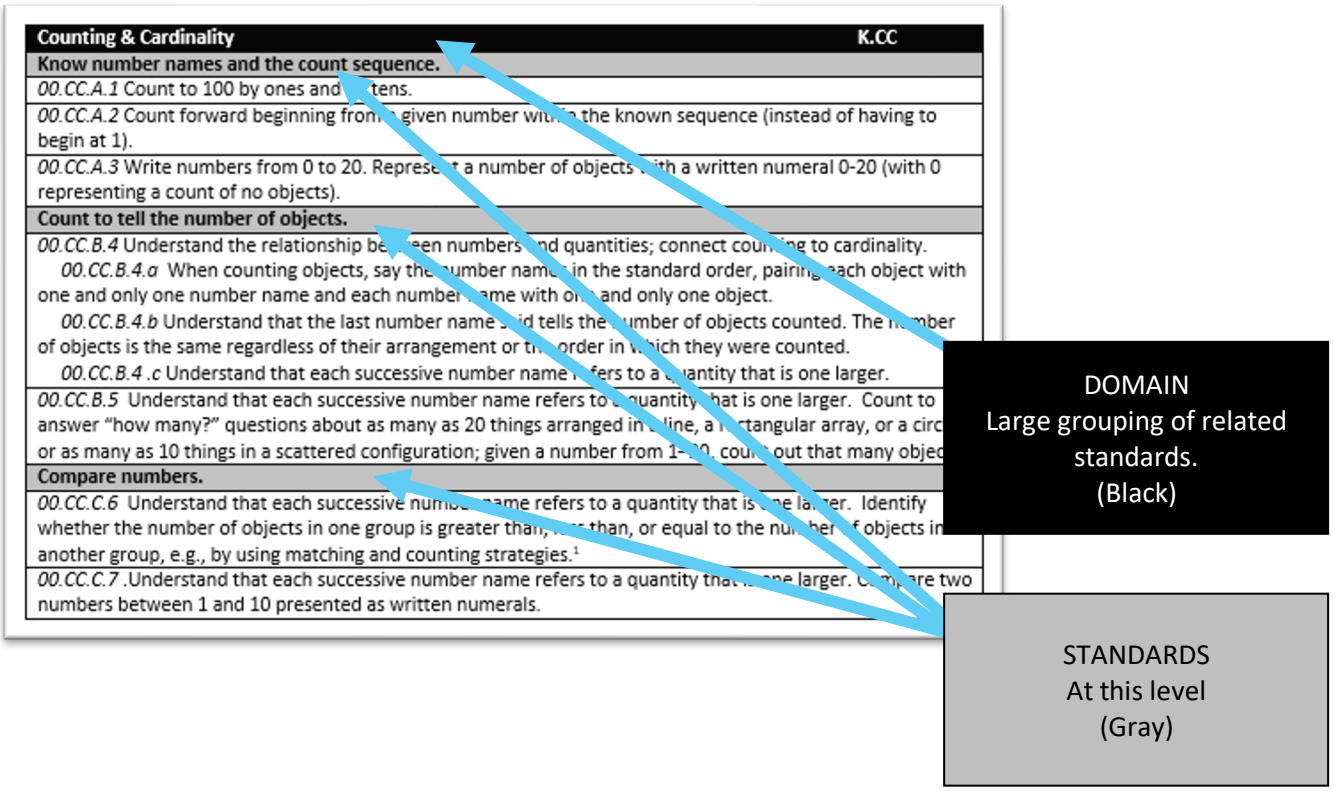
Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

Geometry

- Identify and describe shapes.

- Analyze, compare, create, and compose shapes.



00.CC.B.4.b* 00: refers to Level 0 (first 0 is place holder) CC: refers to Domain, Counting and Cardinality B: refers to Cluster (Count to tell the number of objects) 4: fourth standard in this Domain b: refers to second sub-standard in this standard group OO.CC.C.6 00: refers to Level 0 (first 0 is place holder) CC: refers to Domain, Counting and Cardinality C: refers to Cluster (Compare Numbers) 6: refers to sixth standard in this Domain OO.CC.C.7 00: refers to Level 0 (first 0 is place holder) CC: refers to Domain, Counting and Cardinality C: refers to Cluster (Compare Numbers)
*Note that on Educate standard, numbers are preceded by "CC.M." which refers to: Common Core Math

LPSD MATH STANDARDS

LEVEL 0 Math

In LEVEL 0, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Level 0 should be devoted to number than to other topics.

1. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as 5 + 2 = 7 and 7 – 2 = 5. (Level 0 students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.
2. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

LEVEL 0 Overview

Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Number and Operations in Base Ten

- Work with numbers 11–19 to gain foundations for place value.

Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compose
- shapes.

Counting & Cardinality	K.CC
00.M.CC.CL1 Know number names and the count sequence.	
00.M.CC.01 Count to 100 by ones and by tens.	
00.M.CC.02 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	
00.M.CC.03 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	
00.M.CC.CL2 Count to tell the number of objects.	
*00.M.CC.04*Understand the relationship between numbers and quantities; connect counting to cardinality. *00.M.CC.4a* When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. *00.M.CC.4b* Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. *00.M.CC.4c* Understand that each successive number name refers to a quantity that is one larger.	
*00.M.CC.*5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	
00.M.CC.CL3 Compare numbers.	
00.M.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.[1]	
00.M.CC.7 Compare two numbers between 1 and 10 presented as written numerals.	

[1] Include groups with up to ten objects.

Operations & Algebraic Thinking	K.OA
00.M.OA.CL1 Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	
00.M.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings[1], sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	
00.M.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	
00.M.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	
00.M.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	
00.M.OA.5 Fluently add and subtract within 5.	

[1] Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)

Number & Operations in Base Ten	K.NBT
00.M.NBT.CL1 Work with numbers 11-19 to gain foundations for place value.	
00.M.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	

Measurement & Data	K.MD
00.M.MD.CL1 Describe and compare measurable attributes.	
00.M.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	
00.M.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*	
00.M.MD.CL2 Classify objects and count the number of objects in each category	
00.M.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.[1]	

[1] Limit category counts to be less than or equal to 10.

Geometry	K.G
00.M.G.CL1 Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	
00.M.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	
00.M.G.2 Correctly name shapes regardless of their orientations or overall size.	
00.M.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	
00.M.G.CL2 Analyze, compare, create, and compose shapes.	
00.M.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	
00.M.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	
00.M.G.6 Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*	

LEVEL 1

In Level 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.[1]

4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

[1] Students should apply the principle of transitivity of measurement to make indirect comparisons, but they need not use this technical term.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

LEVEL 1 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

Geometry

- Reason with shapes and their attributes.

Operations & Algebraic Thinking	**1.OA**
01.M.0A.CL1 Represent and solve problems involving addition and subtraction.	
01.M.0A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.[1]	
01.M.0A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	
01.M.0A.CL2 Understand and apply properties of operations and the relationship between addition and subtraction.	
01.0A.3 Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*	
01.0A.4 Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*	
01.M.0A.CL3 Add and subtract within 20.	
01.0A.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	
01.0A.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).	
01.M.0A.CL4 Work with addition and subtraction equations.	
01.0A.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.	

01.0A.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.*

[1] Students need not use formal terms for these properties.

Number & Operations in Base Ten **1.NBT**
01.M.NBT.CL1 Extend the counting sequence.
01.M.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
01.M.NBT.CL2 Understand place value.
01.M.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: *01.M.NBT.2a* 10 can be thought of as a bundle of ten ones — called a "ten." *01.M.NBT.2b* The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. *01.M.NBT.2c* The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
01.M.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
01.M.NBT.CL3 Use place value understanding and properties of operations to add and subtract.
01.M.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
01.M.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
01.M.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Measurement & Data **1.MD**
01.M.MD.CL1 Measure lengths indirectly and by iterating length units.
01.M.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.
01.M.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*
01.M.MD.CL2 Tell and write time.
01.M.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.
01.M.MD.CL3 Represent and interpret data.
01.M.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry **1.G**
01.M.G.CL1 Reason with shapes and their attributes.
01.M.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes.

01.M.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.[1]
01.M.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

[1] Students do not need to learn formal names such as "right rectangular prism."

LEVEL 2

In Level 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

1. Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

2. Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

3. Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

4. Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

LEVEL 2 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.
-

Geometry

- Reason with shapes and their attributes.

Operations & Algebraic Thinking 2.OA

02.M.OA.CL1 Represent and solve problems involving addition and subtraction.

02.OA.01 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]
02.M.OA.CL2 Add and subtract within 20.
02.OA.02 Fluently add and subtract within 20 using mental strategies.[2] By end of Grade 2, know from memory all sums of two one-digit numbers.
02.M.OA.CL3 Work with equal groups of objects to gain foundations for multiplication.
02.OA.03 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
02.OA.04 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

[1] See Glossary, Table 1.
[2]See standard 1.OA.6 for a list of mental strategies.

Number & Operations in Base Ten **2.NBT**
2.M.NBT.CL1 Understand place value.
02.M.NBT.01 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: *02.M.NBT.01a* 100 can be thought of as a bundle of ten tens — called a "hundred." *02.M.NBT.01b* The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
02.M.NBT.02 Count within 1000; skip-count by 5s, 10s, and 100s.
02.M.NBT.03 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
02.M.NBT.04 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
2.M.NBT.CL2 Use place value understanding and properties of operations to add and subtract.
02.M.NBT.05 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
02.M.NBT.06 Add up to four two-digit numbers using strategies based on place value and properties of operations.
02.M.NBT.07 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
02.M.NBT.08 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
02.M.NBT.09 Explain why addition and subtraction strategies work, using place value and the properties of operations.[1]

[1] Explanations may be supported by drawings or objects.

Measurement & Data **2.MD**
02.M.MD.CL1 Measure and estimate lengths in standard units.
02.M.MD.01 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

02.M.MD.02 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
02.M.MD.03 Estimate lengths using units of inches, feet, centimeters, and meters.
02.M.MD.04 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
02.M.MD.CL2 Relate addition and subtraction to length.
02.M.MD.05 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
02.M.MD.06 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
02.M.MD.CL3 Work with time and money.
02.M.MD.07 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
02.M.MD.08 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?
02.M.MD.CL4 Represent and interpret data.
02.M.MD.09 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
02.M.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems[1] using information presented in a bar graph.

[1] See Glossary, Table 1.

Geometry	**2.G**
02.M.G.CL1 Reason with shapes and their attributes.	
02.M.G.01 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.[1] Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	
02.M.G.02 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	
02.M.G.03 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	

[1] Sizes are compared directly or visually, not compared by measuring.

LEVEL 3

In Level 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

1. Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

2. Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example, 1/2 of the paint in a small bucket could be less paint than 1/3 of the paint in a larger bucket, but 1/3 of a ribbon is longer than 1/5 of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

3. Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same-size units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.

4. Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 3 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Number and Operations in Base Ten

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- Develop understanding of fractions as numbers.

Measurement and Data

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Geometry

- Reason with shapes and their attributes.

Operations & Algebraic Thinking	**3.OA**
03.M.OA.CL1 Represent and solve problems involving multiplication and division.	
03.M.OA.01 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*	
03.M.OA.02 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*	
03.M.OA.03 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]	
03.M.OA.04 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?*	
03.M.OA.CL2 Understand properties of multiplication and the relationship between multiplication and division.	
03.M.OA.05 Apply properties of operations as strategies to multiply and divide.[2] *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*	
03.M.OA.06 Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*	
03.M.OA.CL3 Multiply and divide within 100.	
03.M.OA.07 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	
03.M.OA.CL4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
03.M.OA.08 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.[3]	

03.M.OA.09 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

[2] Students need not use formal terms for these properties.

[3] This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order.

Number & Operations in Base Ten	**3.NBT**
03.M.NBT.CL1 Use place value understanding and properties of operations to perform multi-digit arithmetic.[1]	
03.M.NBT.01 Use place value understanding to round whole numbers to the nearest 10 or 100.	
03.M.NBT.02 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	
03.M.NBT.03 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.	

[1] A range of algorithms may be used.

Number & Operations—Fractions[1]	**3.NF**
03.M.NF.CL1 Develop understanding of fractions as numbers.	
03.M.NF.01 Understand a fraction 1/*b* as the quantity formed by 1 part when *a* whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b*.	
03.M.NF.02 Understand a fraction as a number on the number line; represent fractions on a number line diagram. *03.M.NF.02a*Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line. *03.M.NF.02b* Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.	
03.M.NF.03 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. *03.M.NF.03a* Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. *03.M.NF.03b* Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. *03.M.NF.03c* Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.* *03.M.NF.03d* Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	

[1] Level 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, 8.

Measurement & Data 3.MD
03.M.MD.CL1 Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
03.M.MD.01 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
03.M.MD.02 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.[2]
03.M.MD.CL2 Represent and interpret data.
03.M.MD.03 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* *03.M.MD.04* Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
03.M.MD.CL3 Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
03.M.MD.05 Recognize area as an attribute of plane figures and understand concepts of area measurement. *03.M.MD.05a* A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. *03.M.MD.05b* A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
03.M.MD.06 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
03.M.MD.07 Relate area to the operations of multiplication and addition. *03.M.MD.07a* Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. *03.M.MD.07b* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. *03.M.MD.07c* Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. *03.M.MD.07d* Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
03.M.MD.CL4 Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
03.M.MD.08 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

[1] Excludes compound units such as cm3 and finding the geometric volume of a container.
[2] Excludes multiplicative comparison problems (problems involving notions of "times as much".

Geometry 3.G

03.M.G.CL1 Reason with shapes and their attributes.
03.M.G.01 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
03.M.G.02 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape*

.

LEVEL 4

In Level 4, instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

1. Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.

2. Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., 15/9 = 5/3), and they develop methods for generating and recognizing equivalent fractions. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.

3. Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 4 Overview

Operations and Algebraic Thinking

- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.

Number and Operations in Base Ten

- Generalize place value understanding for multidigit whole numbers.

Measurement and Data

- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- Represent and interpret data.
- Geometric measurement: understand concepts of angle and measure angles.

Geometry

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Operations & Algebraic Thinking	**4.OA**
04.M.OA.CL1 Use the four operations with whole numbers to solve problems.	
04.M.OA.01 Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	
04.M.OA.02 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.[1]	
04.M.OA.03 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
04.M.OA.CL2 Gain familiarity with factors and multiples.	
04.M.OA.04 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	
04.M.OA.CL3 Generate and analyze patterns.	
04.M.OA.05 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*	

Number & Operations in Base Ten[1]	**4.NBT**
04.M.NBT.CL1 Generalize place value understanding for multi-digit whole numbers.	
04.M.NBT.01 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.*	
04.M.NBT.02 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	
04.M.NBT.03 Use place value understanding to round multi-digit whole numbers to any place.	
04.M.NBT.CL2 Use place value understanding and properties of operations to perform multi-digit arithmetic.	
04.M.NBT.04 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	

04.M.NBT.05 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
04.M.NBT.06 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

[1]Level 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000

Number & Operations—Fractions[1]	**4.NF**
04.M.NF.CL1 Extend understanding of fraction equivalence and ordering.	
04.M.NF.01 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	
04.M.NF.02 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.	
04.M.NF.CL2 Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	
04.M.NF.03 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. *04.M.NF.03a* Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. *04.M.NF.03 b* Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.* *04.M.NF.03c* Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. *04.M.NF.03d* Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	
04.M.NF.04 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. *04.M.NF.04a* Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent 5/4 as the product 5 × (1/4), recording the conclusion by the equation 5/4 = 5 × (1/4).* *04.M.NF.04b* Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express 3 × (2/5) as 6 × (1/5), recognizing this product as 6/5. (In general, n × (a/b) = (n × a)/b.)* *04.M.NF.04c* Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*	
04.M.NF.CL3 Understand decimal notation for fractions, and compare decimal fractions.	
04.M.NF.05 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.[2] *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.*	

04.M.NF.06 Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*
04.M.NF.07 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.

[1] Level 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.
[2] Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.

Measurement & Data **4.MD**
04.M.MD.CL1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
04.M.MD.01 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*
04.M.MD.02 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
04.M.MD.03 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*
04.M.MD.CL2 Represent and interpret data.
04.M.MD.04 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*
04.M.MD.CL3 Geometric measurement: understand concepts of angle and measure angles.
04.M.MD.05 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: *04.M.MD.05*a An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. *04.M.MD.05*b An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.
04.M.MD.06 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
04.M.MD.07 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

Geometry **4.G**

04.M.G.CL1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
04.M.G.01 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
04.M.G.02 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
04.M.G.03 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

LEVEL 5

In Level 5, instructional time should focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

1. Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

2. Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

3. Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 5 Overview

Operations and Algebraic Thinking

- Write and interpret numerical expressions.
- Analyze patterns and relationships.

Number and Operations in Base Ten

- Understand the place value system.

Measurement and Data

- Convert like measurement units within a given measurement system.
- Represent and interpret data.
- Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

- Perform operations with multi-digit whole numbers and with decimals to hundredths.

Number and Operations—Fractions
- Use equivalent fractions as a strategy to add and subtract fractions.
- Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Geometry
- Graph points on the coordinate plane to solve real-world and mathematical problems.
- Classify two-dimensional figures into categories based on their properties.

Operations & Algebraic Thinking	**5.OA**
05.M.OA.CL1 Write and interpret numerical expressions.	
05.M.OA.01 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	
05.M.OA.02 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	
05.M.OA.CL2 Analyze patterns and relationships.	
05.M.OA.03 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	

Number & Operations in Base Ten	**5.NBT**
05.M.NBT.CL1 Understand the place value system.	
05.M.ONBT.01 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	
05.M.ONBT.02 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	
05.M.ONBT.03 Read, write, and compare decimals to thousandths. *05.M.ONBT.03a* Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000). *05.M.ONBT.03b*Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	
05.M.NBT.04 Use place value understanding to round decimals to any place.	
05.M.NBT.CL2 Perform operations with multi-digit whole numbers and with decimals to hundredths.	
05.M.ONBT.05 Fluently multiply multi-digit whole numbers using the standard algorithm.	
05.M.ONBT.06 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
05.M.ONBT.07 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	

Number & Operations—Fractions	**5.NF**

05.M.NF.CL1 Use equivalent fractions as a strategy to add and subtract fractions.
05.M.NF.01 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)*
05.M.NF.02 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*
05.M.NF.CL2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
05.M.NF.03 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*
05.M.NF.04 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. *05.M.NF.04a* Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)* *05.M.NF.04b* Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
05.M.NF.05 Interpret multiplication as scaling (resizing), by: *05.M.NF.05a* Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. *05.M.NF.05b* Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
05.M.NF.06 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
05.M.NF.07 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.[1] *05.M.NF.07a* Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.* *05.M.NF.07b* Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.* *05.M.NF.07c* Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the

problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*

[1] Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

Measurement & Data	**5.MD**
05.M.MD.CL1 Convert like measurement units within a given measurement system.	
05.M.MD.01 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	
05.M.MD.CL2 Represent and interpret data.	
05.M.MD.02 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	
05.M.MD.CL3 Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	
05.M.MD.03 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. *05.M.MD.03a* A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. *05.M.MD.03b* A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.	
05.M.MD.04 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
05.M.MD.05 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. *05.M.MD.05a* Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. *05.M.MD.05b* Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. *05.M.MD.05c* Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	

Geometry	**5.G**
05.M.G.CL1 Graph points on the coordinate plane to solve real-world and mathematical problems.	
05.M.G.01 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel	

in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
05.M.G.02 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
05.M.G.CL2 Classify two-dimensional figures into categories based on their properties.
05.M.G.03 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
05.M.G.04 Classify two-dimensional figures in a hierarchy based on properties.

LEVEL 6

In Level 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

1. Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

2. Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

3. Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.

4. Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected.

Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 6 Overview

Ratios and Proportional Relationships

- Understand ratio concepts and use ratio reasoning to solve problems.

The Number System

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Compute fluently with multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

- Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

- Develop understanding of statistical variability.
- Summarize and describe distributions.

Ratios & Proportional Relationships	**6.RP**
06.M.RP.CL1 Understand ratio concepts and use ratio reasoning to solve problems.	
06.M.RP.01 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*	
06.M.RP.02 Understand the concept of a unit rate a/b associated with a ratio a:b with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*[1]	
06.M.RP.03 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *06.M.RP.03a* Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. *06.M.RP.03b* Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* *06.M.RP.03c* Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. *06.M.RP.03d* Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	

[1] Expectations for unit rates in this grade are limited to non-complex fractions.

The Number System	**6.NS**
06.M.NS.CL1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	
06.M.NS.01 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*	
06.M.NS.CL2 Compute fluently with multi-digit numbers and find common factors and multiples.	
06.M.NS.02 Fluently divide multi-digit numbers using the standard algorithm.	
06.M.NS.03 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	
06.M.NS.04 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*	
06.M.NS.CL3 Apply and extend previous understandings of numbers to the system of rational numbers.	
06.M.NS.05 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	
06.M.NS.06 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. *06.M.NS.06a* Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. *06.M.NS.06b* Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. *06.M.NS.06c* Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	
06.M.NS.07 Understand ordering and absolute value of rational numbers. *06.M.NS.07a* Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* *06.M.NS.07b* Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ºC > –7 ºC to express the fact that –3 ºC is warmer than –7 ºC.* *06.M.NS.07c* Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* *06.M.NS.07d* Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*	

06.M.NS.08 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Expressions & Equations	**6.EE**
06.M.EE.CL1 Apply and extend previous understandings of arithmetic to algebraic expressions.	
06.M.EE.01 Write and evaluate numerical expressions involving whole-number exponents.	
06.M.EE.02 Write, read, and evaluate expressions in which letters stand for numbers. *06.M.EE.02a* Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* *06.M.EE.02b* Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* *06.M.EE.02c* Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	
06.M.EE.03 Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*	
06.M.EE.04 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	
06.M.EE.CL2 Reason about and solve one-variable equations and inequalities.	
06.M.EE.05 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	
06.M.EE.06 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	
06.M.EE.07 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	
06.M.EE.08 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x <$ c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	
06.M.EE.CL3 Represent and analyze quantitative relationships between dependent and independent variables.	
06.M.EE.09 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.	

Geometry	**6.G**
06.M.G.CL1 Solve real-world and mathematical problems involving area, surface area, and volume.	

06.M.G.01 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
06.M.G.02 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
06.M.G.03 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
06.M.G.04 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Statistics & Probability **6.SP**
06.M.SP.CL1 Develop understanding of statistical variability.
06.M.SP.01 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*
06.M.SP.02 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
06.M.SP.03 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
06.M.SP.CL2 Summarize and describe distributions.
06.M.SP.04 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
06.M.SP.05 Summarize numerical data sets in relation to their context, such as by: *06.M.SP.05a* Reporting the number of observations. *06.M.SP.05b* Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. *06.M.SP.05c* Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. *06.M.SP.05d* Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

LEVEL 7

In Level 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

1. Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

2. Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

3. Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

4. Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 7 Overview

Ratios and Proportional Relationships

- Analyze proportional relationships and use them to solve real-world and mathematical problems.

Geometry

- Draw, construct and describe geometrical figures and describe the relationships between them.

The Number System
- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations
- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems
- using numerical and algebraic expressions and equations.
- Solve real-life and mathematical problems
- involving angle measure, area, surface area, and volume.

Statistics and Probability
- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

Ratios & Proportional Relationships **7.RP**
07.M.RP.CL1 Analyze proportional relationships and use them to solve real-world and mathematical problems.
07.M.RP.01 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour.*
07.M.RP.02 Recognize and represent proportional relationships between quantities. *07.M.RP.02a* Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. *07.M.RP.02b* Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. *07.M.RP.02c* Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.* *07.M.RP.02d* Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
07.M.RP.03 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

The Number System 7.NS
07.M.NS.CL1 Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
07.M.NS.01 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. *07.M.NS.01a* Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.* *07.M.NS.01* b Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. *07.M.NS.01* c Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. *07.M.NS.01*d Apply properties of operations as strategies to add and subtract rational numbers.
07.M.NS.02 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. *07.M.NS.02a* Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. *07.M.NS.02b* Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts. *07.M.NS.02c* Apply properties of operations as strategies to multiply and divide rational numbers. *07.M.NS.02d* Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
07.M.NS.03 Solve real-world and mathematical problems involving the four operations with rational numbers.[1]

[1] Computations with rational numbers extend the rules for manipulating fractions to complex fractions.

Expressions & Equations 7.EE
07.M.EE.CL1 Use properties of operations to generate equivalent expressions.
07.M.EE.01 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
07.M.EE.02 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*
07.M.EE.CL2 Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
07.M.EE.03 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*

07.M.EE.04 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *07.M.EE.04a* Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* *07.M.EE.04b* Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Geometry **7.G**
07.M.G.CL1 Draw construct, and describe geometrical figures and describe the relationships between them.
07.M.G.01 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
07.M.G.02 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
07.M.G.03 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
07.M.G.CL2 Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
07.M.G.04 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
07.M.G.05 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
07.M.G.06 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Statistics & Probability **7.SP**
07.M.SP.CL1 Use random sampling to draw inferences about a population.
07.M.SP.01 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
07.M.SP.02 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*
07.M.SP.CL2 Draw informal comparative inferences about two populations.
07.M.SP.03 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*
07.M.SP.04 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a*

chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.
07.M.SP.CL3 Investigate chance processes and develop, use, and evaluate probability models.
07.M.SP.05 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
07.M.SP.06 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*
07.M.SP.07 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. *07.M.SP.07a* Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* *07.M.SP.07b* Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*
07.M.SP.08 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. *07.M.SP.08a* Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. *07.M.SP.08b* Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. *07.M.SP.08c* Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*

LEVEL 8

In Level 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.

1. Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A, the output or y-coordinate changes by the amount $m \cdot A$. Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret components of the relationship (such as slope and y-intercept) in terms of the situation.

   Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

2. Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations.

3. Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Level 8 Overview

The Number System

Geometry

- Know that there are numbers that are not rational, and approximate them by rational numbers.

Expressions and Equations
- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

Functions
- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.
- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Statistics and Probability
- Investigate patterns of association in bivariate data.

The Number System	**8.NS**
08.M.NS.CL1 Know that there are numbers that are not rational, and approximate them by rational numbers.	
08.M.NS.01 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	
08.M.NS.02 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	

Expressions & Equations	**8.EE**
08.M.EE.CL1 Work with radicals and integer exponents.	
08.M.EE.01 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.	
08.M.EE.02 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.	
08.M.EE.03 Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger.*	
08.M.EE.04 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	
08.M.EE.CL2 Understand the connections between proportional relationships, lines, and linear equations.	
08.M.EE.05 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	
08.M.EE.06 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	
08.M.EE.CL3 Analyze and solve linear equations and pairs of simultaneous linear equations.	

08.M.EE.07 Solve linear equations in one variable. *08.M.EE.07a* Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). *08.M.EE.07b* Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
08.M.EE.08 Analyze and solve pairs of simultaneous linear equations. *08.M.EE.08a* Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. *08.M.EE.08b* Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.* *08.M.EE.08c* Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

Functions **8.F**
08.M.F.CL1 Define, evaluate, and compare functions.
08.M.F.01 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.[1]
08.M.F.02 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
08.M.F.03 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*
08.M.F.CL2 Use functions to model relationships between quantities.
08.M.F.04 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
08.M.F.05 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

[1]Function notation is not required in Level 8.

Geometry **8.G**
08.M.G.CL1 Understand congruence and similarity using physical models, transparencies, or geometry software.
08.M.G.01 Verify experimentally the properties of rotations, reflections, and translations: *08.M.G.01*a Lines are taken to lines, and line segments to line segments of the same length. *08.M.G.01*b Angles are taken to angles of the same measure. *08.M.G.01*c Parallel lines are taken to parallel lines.

08.M.G.02 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
08.M.G.03 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
08.M.G.04 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
08.M.G.05 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
08.M.G.CL2 Understand and apply the Pythagorean Theorem.
08.M.G.06 Explain a proof of the Pythagorean Theorem and its converse.
08.M.G.07 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
08.M.G.08 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
08.M.G.CL3 Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.
08.M.G.09 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Statistics & Probability **8.SP**
08.M.SP.CL1 Investigate patterns of association in bivariate data.
08.M.SP.01 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
08.M.SP.02 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
08.M.SP.03 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
08.M.SP.04 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

Table 1. Common addition and subtraction situations.[1]

	Result Unknown	Change Unknown	Start Unknown
Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? 2 + ? = 5	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? ? + 3 = 5
Take from	Five apples were on the table. I ate two apples. How many apples are on the table now? 5 – 2 = ?	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 – ? = 3	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ? – 2 = 3
	Total Unknown	**Addend Unknown**	**Both Addends Unknown[2]**
Put Together/ Take Apart[3]	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 – 3 = ?	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 = 4 + 1 5 = 2 + 3, 5 = 3 + 2
	Difference Unknown	**Bigger Unknown**	**Smaller Unknown**
Compare[4]	("How many more?" version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? ("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie? 2 + ? = 5, 5 – 2 = ?	(Version with "more"): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have? 2 + 3 = ?, 3 + 2 = ?	(Version with "more"): Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? 5 – 3 = ?, ? + 3 = 5

[1]Adapted from Box 2-4 of Mathematics Learning in Early Childhood, National Research Council (2009, pp. 32, 33).
[2]These take apart situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean makes or results in but always does mean is the same number as.
[3]Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation, especially for small numbers less than or equal to 10.
[4]For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using more for the bigger unknown and using less for the smaller unknown). The other versions are more difficult.

Table 2. Common multiplication and division situations.[1]

	Unknown Product 3 × 6 = ?	Group Size Unknown ("How many in each group?" Division) 3 × ? = 18, and 18 ÷ 3 = ?	Number of Groups Unknown ("How many groups?" Division) ? × 6 = 18, and 18 ÷ 6 = ?
Equal Groups	There are 3 bags with 6 plums in each bag. How many plums are there in all? *Measurement example*. You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? *Measurement example*. You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	If 18 plums are to be packed 6 to a bag, then how many bags are needed? *Measurement example*. You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?
Arrays,[2] Area[3]	There are 3 rows of apples with 6 apples in each row. How many apples are there? *Area example*. What is the area of a 3 cm by 6 cm rectangle?	If 18 apples are arranged into 3 equal rows, how many apples will be in each row? *Area example*. A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? *Area example*. A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
Compare	A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? *Measurement example*. A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? *Measurement example*. A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?	A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat? *Measurement example*. A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?
General	$a \times b = ?$	$a \times ? = p$, and $p \div a = ?$	$? \times b = p$, and $p \div b = ?$

[1]The first examples in each cell are examples of discrete things. These are easier for students and should be given before the measurement examples.

[2]The language in the array examples shows the easiest form of array problems. A harder form is to use the terms rows and columns: The apples in the grocery window are in 3 rows and 6 columns. How many apples are in there? Both forms are valuable.

[3]Area involves arrays of squares that have been pushed together so that there are no gaps or overlaps, so array problems include these especially important measurement situations.

Table 3. The properties of operations. Here *a*, *b* and *c* stand for arbitrary numbers in a given number system. The properties of operations apply to the rational number system, the real number system, and the complex number system.

Associative property of addition	$(a + b) + c = a + (b + c)$
Commutative property of addition	$a + b = b + a$
Additive identity property of 0	$a + 0 = 0 + a = a$
Existence of additive inverses	For every a there exists $-a$ so that $a + (-a) = (-a) + a = 0$
Associative property of multiplication	$(a \times b) \times c = a \times (b \times c)$
Commutative property of multiplication	$a \times b = b \times a$
Multiplicative identity property of 1	$a \times 1 = 1 \times a = a$
Existence of multiplicative inverses	For every $a \neq 0$ there exists $1/a$ so that $a \times 1/a = 1/a \times a = 1$
Distributive property of multiplication over addition	$a \times (b + c) = a \times b + a \times c$

Table 4. The properties of equality. Here *a*, *b* and *c* stand for arbitrary numbers in the rational, real, or complex number systems.

Reflexive property of equality	$a = a$
Symmetric property of equality	If $a = b$, then $b = a$
Transitive property of equality	If $a = b$ and $b = c$, then $a = c$
Addition property of equality	If $a = b$, then $a + c = b + c$
Subtraction property of equality	If $a = b$, then $a - c = b - c$
Multiplication property of equality	If $a = b$, then $a \times c = b \times c$
Division property of equality	If $a = b$ and $c \neq 0$, then $a \div c = b \div c$
Substitution property of equality	If $a = b$, then b may be substituted for a in any expression containing a.

Table 5. The properties of inequality. Here *a*, *b* and *c* stand for arbitrary numbers in the rational or real number systems.

Exactly one of the following is true: $a < b$, $a = b$, $a > b$.
If $a > b$ and $b > c$ then $a > c$.
If $a > b$, then $b < a$.
If $a > b$, then $-a < -b$.
If $a > b$, then $a \pm c > b \pm c$.
If $a > b$ and $c > 0$, then $a \times c > b \times c$.
If $a > b$ and $c < 0$, then $a \times c < b \times c$.
If $a > b$ and $c > 0$, then $a \div c > b \div c$.
If $a > b$ and $c < 0$, then $a \div c < b \div c$.

LEVEL 9 (ALGEBRA 1) OVERVIEW

Number and Quantity

The Real Number System
- Extend the properties of exponents to rational exponents.
- Use properties of rational and irrational numbers.

Quantities
- Reason quantitatively and use units to solve problems.

Algebra

Seeing Structure in Expressions
- Interpret the structure of expressions.
- Write expressions in equivalent forms to solve problems.

Arithmetic with Polynomials and Rational Expressions
- Perform arithmetic operations on polynomials.

Creating Equations
- Create equations that describe numbers or relationships.

Reasoning with Equations and Inequalities
- Understand solving equations as a process of reasoning and explain the reasoning.
- Solve equations and inequalities in one variable.
- Solve systems of equations.
- Represent and solve equations and inequalities graphically.

Functions

Interpreting Functions
- Understand the concept of a function and use function notation.
- Interpret functions that arise in applications in terms of the context.
- Analyze functions using different representations.

Building Functions
- Build a function that models a relationship between two quantities.
- Build new functions from existing functions.

Standards for Mathematical Practice
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for an express regularity in repeated reasoning.

Functions (cont'd.)

Linear, Quadratic, and Exponential Models

- Construct and compare linear, quadratic, and exponential models and solve problems.
- Interpret expressions for functions in terms of the situation they model.

Statistics and Probability

Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable.
- Summarize, represent, and interpret data on two categorical and quantitative variables.
- Interpret linear models.

Content Standards **Number and Quantity**	
The Real Number System	N-RN
09.M.N-RN.CL1 Extend the properties of exponents to rational exponents.	
09.M.N-RN.01 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.*	
09.M.N-RN.02 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	
09.M.N-RN.CL2 Use properties of rational and irrational numbers.	
09.M.N-RN.03 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	
Quantities	N-Q
09.M.N-Q.CL1 Reason quantitatively and use units to solve problems.	
09.M.N-Q.01 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	
09.M.N-Q.02 Define appropriate quantities for the purpose of descriptive modeling.	
09.M.N-Q.03 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	
Algebra	
Seeing Structure in Expressions	A-SSE
09.M.A-SSE.CL1 Interpret the structure of expressions.	
09.M.A-SSE.01 Interpret expressions that represent a quantity in terms of its context.	
09.M.A-SSE.01.a Interpret parts of an expression, such as terms, factors, and coefficients.	
09.M.A-SSE.01.b Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*	
09.M.A-SSE.02 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 – y^4$ as $(x^2)^2 – (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 – y^2)(x^2 + y^2)$.*	
09.M.A-SSE.CL2 Write expressions in equivalent forms to solve problems.	
09.M.A-SSE.03 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. 09.M.A-SSE.03a Factor a quadratic expression to reveal the zeros of the function it defines. 09.M.A-SSE.03b Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	

09.M.A-SSE.03c Use the properties of exponents to transform expressions for exponential functions. *For example, the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*
Arithmetic with Polynomials and Rational Expressions A-APR
09.M.A-APR.CL1 Perform arithmetic operations on polynomials.
09.M.A-APR.01 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
Creating Equations A-CED
09.M.A-CED.CL1 Create equations that describe numbers or relationships.
09.M.A-CED.01 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
09.M.A-CED.02 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
09.M.A-CED.03 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*
09.M.A-CED.04 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law V = IR to highlight resistance R.*
Reasoning with Equations and Inequalities A-REI
09.M.A-REI.CL1 Understand solving equations as a process of reasoning and explain the reasoning.
09.M.A-REI.01 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
09.M.A-REI.CL2 Solve equations and inequalities in one variable.
09.M.A-REI.03 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
09.M.A-REI.03.a Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. 09.M.A-REI.03.b Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b. 09.M.A-REI.04 Solve quadratic equations in one variable.
09.M.A-REI.CL3 Solve systems of equations.
09.M.A-REI.05 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
09.M.A-REI.06 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
09.M.A-REI.07 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.*
09.M.A-REI.CL4 Represent and solve equations and inequalities graphically.
09.M.A-REI.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
09.M.A-REI.11 Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.

09.M.A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
Functions
Interpreting Functions F-IF
09.M.F-IF.CL1 Understand the concept of a function and use function notation.
09.M.F-IF.01 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
09.M.F-IF.02 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
09.M.F-IF.03 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n + 1) = f(n) + f(n 1) for n ≥ 1.*
09.M.F-IF.CL2 Interpret functions that arise in applications in terms of the context.
09.M.F-IF.04 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*
09.M.F-IF.05 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*
09.M.F-IF.06 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
09.M.F-IF.CL3 Analyze functions using different representations.
09.M.F-IF.07 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. 09.M.F-IF.07a Graph linear and quadratic functions and show intercepts, maxima, and minima. 09.M.F-IF.07b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. 09.M.F-IF.07e Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
09.M.F-IF.08 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. 09.M.F-IF.08a Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. 09.M.F-IF.08b Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as* $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, *and* $y = (1.2)^{t/10}$, *and classify them as representing exponential growth or decay.*
09.M.F-IF.09 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*
Building Functions F-BF
09.M.F-BF.CL1 Build a function that models a relationship between two quantities.

09.M.F-BF.01 Write a function that describes a relationship between two quantities. 09.M.F-BF.01a Determine an explicit expression, a recursive process, or steps for calculation from a context. 09.M.F-BF.01b Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*
09.M.F-BF.02 Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
09.M.F-BF.CL2 Build new functions from existing functions.
09.M.F-BF.03 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*
09.M.F-BF.04 Find inverse functions. 09.M.F-BF.04a Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x + 1)/(x - 1)$ for $x \neq 1$.*
Linear, Quadratic, and Exponential Models F-LE
09.M.F-LE.CL1 Construct and compare linear, quadratic, and exponential models and solve problems.
09.M.F-LE.01 Distinguish between situations that can be modeled with linear functions and with exponential functions. 09.M.F-LE.01a Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. 09.M.F-LE.01b Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. 09.M.F-LE.01c Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.
09.M.F-LE.02 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
09.M.F-LE.03 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
09.M.F-LE.CL1 Interpret expressions for functions in terms of the situation they model.
09.M.F-LE.05 Interpret the parameters in a linear or exponential function in terms of a context.
Statistics and Probability
Interpreting Categorical and Quantitative Data S-ID
09.M.S-ID.CL1 Summarize, represent, and interpret data on a single count or measurement variable.
09.M.S-ID.01 Represent data with plots on the real number line (dot plots, histograms, and box plots).
09.M.S-ID.02 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
09.M.S-ID.03 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
09.M.S-ID.CL2 Summarize, represent, and interpret data on two categorical and quantitative variables.
09.M.S-ID.05 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.

09.M.S-ID.06 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. 09.M.S-ID.06a Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.* 09.M.S-ID.06b Informally assess the fit of a function by plotting and analyzing residuals. 09.M.S-ID.06c Fit a linear function for a scatter plot that suggests a linear association.
09.M.S-ID.CL3 Interpret linear models.
09.M.S-ID.07 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
09.M.S-ID.08 Compute (using technology) and interpret the correlation coefficient of a linear fit.
09.M.S-ID.09 Distinguish between correlation and causation.

LEVEL 10 OVERVIEW

Number and Quantity

Quantities

- Reason quantitatively and use units to solve problems.

Geometry

Congruence

- Experiment with transformations in the plane.
- Understand congruence in terms of rigid motions.
- Prove geometric theorems.
- Make geometric constructions.

Similarity, Right Triangles, and Trigonometry

- Understand similarity in terms of similarity in terms of similarity transformations.
- Prove theorems involving similarity.
- Define trigonometric ratios and solve problems involving right triangles.
- Apply trigonometry to general triangles.

Circles

- Understand and apply theorems about circles.
- Find arc lengths and area of sectors of circles.

Expressing Geometric Properties with Equations

- Translate between the geometric description and the equation for a conic section.
- Use coordinates to prove simple geometric theorems algebraically.

Geometric Measurement and Dimension

- Explain volume formulas and use them to solve problems.
- Visualize relationships between two-dimensional and three-dimensional objects.

Modeling with Geometry

- Apply geometric concepts in modeling situations.

Standards for Mathematical Practice
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for an express regularity in repeated reasoning.

Statistics and Probability

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data.
- Use the rules of probability to compute probabilities of compound events in a uniform probability model.

Using Probability to Make Decisions

- Use probability to evaluate outcomes of decisions.

Content Standards

Number and Quantity
Quantities N-Q
10.M.N-Q.CL1 Reason quantitatively and use units to solve problems.
10.M.N-Q.02 Define appropriate quantities for the purpose of descriptive modeling.
10.M.N-Q.03 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Geometry
Congruence G-CO
10.M.G-CO.CL1 Experiment with transformations in the plane.
10.M.G-CO.01 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
10.M.G-CO.02 Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
10.M.G-CO.03 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
10.M.G-CO.04 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
10.M.G-CO.05 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
10.M.G-CO.CL2 Understand congruence in terms of rigid motions.
10.M.G-CO.06 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
10.M.G-CO.07 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
10.M.G-CO.08 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.
10.M.G-CO.CL3 Prove geometric theorems.
10.M.G-CO.09 Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*
10.M.G-CO.10 Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*
10.M.G-CO.11 Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*
10.M.G-CO.CL4 Make geometric constructions.
10.M.G-CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*
10.M.G-CO.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
Similarity, Right Triangles, and Trigonometry G-SRT
10.M.G-SRT.CL1 Understand similarity in terms of similarity transformations.

10.M.G-SRT.01 Verify experimentally the properties of dilations given by a center and a scale factor: 10.M.G-SRT.01a A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. 10.M.G-SRT.01bThe dilation of a line segment is longer or shorter in the ratio given by the scale factor.
10.M.G-SRT.02 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
10.M.G-SRT.03 Use the properties of similarity transformations to establish the Angle-Angle (AA) criterion for two triangles to be similar.
10.M.G-SRT.CL2 Prove theorems involving similarity.
10.M.G-SRT.04 Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*
10.M.G-SRT.05 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
10.M.G-SRT.CL3 Define trigonometric ratios and solve problems involving right triangles.
10.M.G-SRT.06 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
10.M.G-SRT.07 Explain and use the relationship between the sine and cosine of complementary angles.
10.M.G-SRT.08 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
10.M.G-SRT.CL4 Apply trigonometry to general triangles.
10.M.G-SRT.09 (+) Derive the formula $A = \frac{1}{2}ab\sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
10.M.G-SRT.10 (+) Prove the Laws of Sines and Cosines and use them to solve problems.
10.M.G-SRT.11 (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).
Circles G-C
10.M.G-C.CL1 Understand and apply theorems about circles.
10.M.G-C.01 Prove that all circles are similar.
10.M.G-C.02 Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*
10.M.G-C.03 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
10.M.G-C.04 (+) Construct a tangent line from a point outside a given circle to the circle.
10.M.G-C.CL2 Find arc lengths and areas of sectors of circles.
10.M.G-C.05 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
Expressing Geometric Properties with Equations G-GPE
10.M.G-GPE.CL1 Translate between the geometric description and the equation for a conic section.
10.M.G-GPE.01 Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
10.M.G-GPE.02 Derive the equation of a parabola given a focus and directrix.
10.M.G-GPE.CL2 Use coordinates to prove simple geometric theorems algebraically.
10.M.G-GPE.04 Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, $\sqrt{3}$) lies on the circle centered at the origin and containing the point (0, 2).*

10.M.G-GPE.05 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
10.M.G-GPE.06 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
10.M.G-GPE.07 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
Geometric Measurement and Dimension G-GMD
10.M.G-GMD.CL1 Explain volume formulas and use them to solve problems.
10.M.G-GMD.01 Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*
10.M.G-GMD.02 (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.
10.M.G-GMD.03 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
10.M.G-GMD.CL2 Visualize relationships between two-dimensional and three-dimensional objects.
10.M.G-GMD.04 Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
Modeling with Geometry G-MG
Apply geometric concepts in modeling situations.
10.M.G-MG.01 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
10.M.G-MG.02 Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).
10.M.G-MG.03 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).
Statistics and Probability
Conditional Probability and the Rules of Probability S-CP
10.M.S-CP.CL1 Understand independence and conditional probability and use them to interpret data.
10.M.S-CP.01 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").
10.M.S-CP.02 Understand that two events *A* and *B* are independent if the probability of *A* and *B* occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
10.M.S-CP.03 Understand the conditional probability of *A* given *B* as *P*(*A* and *B*)/*P*(*B*), and interpret independence of *A* and *B* as saying that the conditional probability of *A* given *B* is the same as the probability of *A*, and the conditional probability of *B* given *A* is the same as the probability of *B*.
10.M.S-CP.04 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*
10.M.S-CP.05 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*
10.M.S-CP.CL2 Use the rules of probability to compute probabilities of compound events in a uniform probability model.
10.M.S-CP.06 Find the conditional probability of *A* given *B* as the fraction of *B*'s outcomes that also belong to *A*, and interpret the answer in terms of the model.

10.M.S-CP.07 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.
10.M.S-CP.08 (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B\|A) = P(B)P(A\|B)$, and interpret the answer in terms of the model.
10.M.S-CP.09 (+) Use permutations and combinations to compute probabilities of compound events and solve problems.
Using Probability to Make Decisions S-MD
10.M.S-MD.CL2 Use probability to evaluate outcomes of decisions.
10.M.S-MD.06 (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
10.M.S-MD.07 (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

LEVEL 11 (ALGEBRA 2) OVERVIEW

Number and Quantity

The Complex Number System

- Perform arithmetic operations with complex numbers.
- Use complex numbers in polynomial identities and equations.

Vector and Matrix Quantities

- Represent and model with vector quantities.
- Perform operations on matrices and use matrices in applications.

Algebra

Seeing Structure in Expressions

- Interpret the structure of expressions.
- Write expressions in equivalent forms to solve problems.

Arithmetic with Polynomials and Rational Expressions

- Perform arithmetic operations on polynomials.
- Understand the relationship between zeros and factors of polynomials.
- Use polynomial identities to solve problems.
- Rewrite rational expressions.

Creating Equations

- Create equations that describe numbers or relationships.

Reasoning with Equations and Inequalities

- Understand solving equations as a process of reasoning and explain the reasoning.
- Represent and solve equations and inequalities graphically.

Functions

Interpreting Functions

- Interpret functions that arise in applications in terms of the context.
- Analyze functions using different representations.

Building Functions

- Build a function that models a relationship between two quantities.
- Build new functions from existing functions.

Standards for Mathematical Practice
1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for an express regularity in repeated reasoning.

Functions (cont'd.)

Linear, Quadratic, and Exponential Models

- Construct and compare linear, quadratic, and exponential models and solve problems.

Trigonometric Functions

- Extend the domain of trigonometric functions using the unit circle.
- Model periodic phenomena with trigonometric functions.
- Prove and apply trigonometric identities.

Statistics and Probability

Interpreting Categorical and Quantitative Data

- Summarize, represent and interpret data on a single count or measurement variable.

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments.
- Make inferences and justify conclusions from sample surveys, experiments and observational studies.

Using Probability to Make Decisions

- Use probability to evaluate outcomes of decisions.

Number and Quantity	
The Complex Number System	N-CN
11.M.N-CN.CL1 Perform arithmetic operations with complex numbers.	
11.M.N-CN.01 Know there is a complex number *i* such that $i^2 = -1$, and every complex number has the form *a* + *bi* with *a* and *b* real.	
11.M.N-CN.01 Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	
11.M.N-CN.CL3 Use complex numbers in polynomial identities and equations.	
11.M.N-CN.07 Solve quadratic equations with real coefficients that have complex solutions.	
11.M.N-CN.08 (+) Extend polynomial identities to the complex numbers. *For example, rewrite* $x^2 + 4$ *as* $(x + 2i)(x - 2i)$.	
11.M.N-CN.09 (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	
Vector and Matrix Quantities	N-VM
11.M.N-VM.CL1 Represent and model with vector quantities.	
11.M.N-VM.01 (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., $\boldsymbol{v}$, $\lvert\boldsymbol{v}\rvert$, $\lVert\boldsymbol{v}\rVert$, v).	
11.M.N-VM.03 (+) Solve problems involving velocity and other quantities that can be represented by vectors.	
11.M.N-VM.CL3 Perform operations on matrices and use matrices in applications.	
11.M.N-VM.06 (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.	
11.M.N-VM.08 (+) Add, subtract, and multiply matrices of appropriate dimensions.	
11.M.N-VM.12 (+) Work with 2 2 matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.	
Algebra	
Seeing Structure in Expressions	A-SSE
11.M.A-SSE.CL1 Interpret the structure of expressions.	
11.M.A-SSE.01 Interpret expressions that represent a quantity in terms of its context.	

11.M.A-SSE.01a Interpret parts of an expression, such as terms, factors, and coefficients.
11.M.A-SSE.01b Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*
11.M.A-SSE.02 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*
11.M.A-SSE.CL2 Write expressions in equivalent forms to solve problems.
11.M.A-SSE.04 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.*
Arithmetic with Polynomials and Rational Expressions A-APR
11.M.A-APR.CL1 Perform arithmetic operations on polynomials.
11.M.A-APR.01 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
11.M.A-APR.CL2 Understand the relationship between zeros and factors of polynomials.
11.M.A-APR.02 Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x – a$ is $p(a)$, so $p(a) = 0$ if and only if $(x – a)$ is a factor of $p(x)$.
11.M.A-APR.03 Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.
11.M.A-APR.CL3 Use polynomial identities to solve problems.
11.M.A-APR.04 Prove polynomial identities and use them to describe numerical relationships. *For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 – y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples.*
11.M.A-APR.05 (+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.
11.M.A-APR.CL4 Rewrite rational expressions.
11.M.A-APR.06 Rewrite simple rational expressions in different forms; write $\boldsymbol{a(x)/b(x)}$ in the form $q(x) + \boldsymbol{r(x)/b(x)}$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.
11.M.A-APR.07 (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.
Creating Equations A-CED
11.M.A-CED.CL1 Create equations that describe numbers or relationships.
11.M.A-CED.01 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
11.M.A-CED.02 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
11.M.A-CED.03 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*
11.M.A-CED.04 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V = IR$ to highlight resistance R.*
Reasoning with Equations and Inequalities A-REI
11.M.A-REI.CL1 Understand solving equations as a process of reasoning and explain the reasoning.
11.M.A-REI.02 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
11.M.A-REI.CL4 Represent and solve equations and inequalities graphically.
11.M.A-REI.11 Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using

technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
Functions
Interpreting Functions F-IF
11.M.F-IF.CL2 Interpret functions that arise in applications in terms of the context.
11.M.F-IF.04 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*
11.M.F-IF.05 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*
11.M.F-IF.06 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
11.M.F-IF.CL3 Analyze functions using different representations.
11.M.F-IF.07 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
11.M.F-IF.07b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
11.M.F-IF.07c Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
11.M.F-IF.07e Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
11.M.F-IF.08 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
11.M.F-IF.09 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*
Building Functions F-BF
11.M.F-BF.CL1 Build a function that models a relationship between two quantities.
11.M.F-BF.01 Write a function that describes a relationship between two quantities.
11.M.F-BF.01b Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*
11.M.F-BF.CL2 Build new functions from existing functions.
11.M.F-BF.03 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*
11.M.F-BF.04 Find inverse functions. 11.M.F-BF.04a Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x + 1)/(x\ \ 1)$ for $x \neq 1$.*
Linear, Quadratic, and Exponential Models F-LE
11.M.F-LE.CL1 Construct and compare linear, quadratic, and exponential models and solve problems.
11.M.F-LE.04 For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.
Trigonometric Functions F-TF
11.M.F-TF.CL1 Extend the domain of trigonometric functions using the unit circle.

11.M.F-TF.01 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
11.M.F-TF.02 Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
11.M.F-TF.CL2 Model periodic phenomena with trigonometric functions.
11.M.F-TF.05 Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
11.M.F-TF.CL3 Prove and apply trigonometric identities.
11.M.F-TF.08 Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant.
Statistics and Probability
Interpreting Categorical and Quantitative Data S-ID
11.M.S-ID.CL1 Summarize, represent, and interpret data on a single count or measurement variable.
CC.M.11.ID.04 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
Making Inferences and Justifying Conclusions S-IC
11.M.S-IC.CL1 Understand and evaluate random processes underlying statistical experiments.
11.M.S-IC.01 Understand statistics as a process for making inferences to be made about population parameters based on a random sample from that population.
11.M.S-IC.02 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*
11.M.S-IC.CL2 Make inferences and justify conclusions from sample surveys, experiments, and observational studies.
11.M.S-IC.03 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
11.M.S-IC.04 Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
11.M.S-IC.05 Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
11.M.S-IC.06 Evaluate reports based on data.
Using Probability to Make Decisions S-MD
11.M.S-MD.CL2 Use probability to evaluate outcomes of decisions.
11.M.S-MD.06 (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
11.M.S-MD.07 (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

MA Strand	**Standard**	**MATH LEVEL 12**
Core Resources: AGS Consumer Math		
12.M.EC	**Estimation and Computation**	
	01	Calculates gross pay vs. net pay
	02	Applies all operations using fractions, decimals, and percents, and proportions in real-life applications

	03	Calculates simple interest and compound interest including semiannual, quarterly, and monthly interest for periods of more or less than one year
	04	Understands and is able to explain the function of a checking account and reconcile a bank statement
	05	Calculates the cost and return of stocks and bonds, including percent profit or percent loss
	06	Calculates end of year federal income tax using short form
	07	Computes property tax, property tax rates, and assessment rates
	08	Calculates end of year taxes using long form
	09	Describes how math is used in various careers
12.M.FR	**Functions and Relationships**	
	01	Understands general consumer purchases and payment plans (food, clothing, car, and credit card)
	02	Calculates cost of goods sold with sales tax
	03	Performs and manages basic financial operations (e.g. budgeting money and repayment of loans)
	04	Calculates insurance rates, discounts, and commission sales
	05	Demonstrates knowledge of food consumption and preparation
	06	Applies various measurement systems to describe situations and solve problems
12.M.MEA	**Measurement**	
	01	Evaluates measurements for accuracy, precision, and error with respect to the measuring tools, methods, and the computational process
	02	Estimates and converts measurements between different systems
	03	Makes travel calculations (inc. elapsed time and time zones)
12.M.G	**Geometry**	
	01	Prepares a budget, including reading and constructing a circle graph
12.M.PS	**Problem-Solving**	
	01	Applies various problem solving strategies to solve problems from this level
	02	Defends conclusions with examples and applies to new situations
12.M.CR	**Communication and Reasoning**	
	01	Uses technology, vocabulary, symbols and notation to defend mathematical ideas, solutions and methods to various audiences
	02	Recognizes and applies inductive and deductive reasoning
	03	Makes tests and proves mathematical conjectures
12.M.C	**Connections** **The student understands and applies mathematical skills and processes across the content strands**	
	01	Applies practical skills in problem solving using typical business, consumer and real world problems

LPSD SOCIAL STUDIES STANDARDS

LEVEL 0

SS Strand	Standard	Social Studies Level 0
Core Resource: Scott Foresman Social Studies, *All Together* (Gr. 1)		
00.SS.PC	**People and Cultures**	
	01	Shares experiences that reflect family culture (camping, fishing, potlucks, hunting, story telling, travel)
00.SS.TC	**Time and Change**	
	01	Creates a timeline using events from their own lives (e.g., birth, crawling, walking, loosing teeth)
00.SS.GEO	**Geography**	
	01	Uses directions or positional words (up/down, in/out, above/below) to identify locations in the classroom.
00.SS.GOV	**Government**	
	01	Explains (i.e. using classroom rules) why people do not have the right to do whatever they want (i.e. to promote fairness, ensure the common good, and to maintain safety)
00.SS.EC	**Economics**	
	01	Makes a list of needs and wants and explains the difference
	02	Describes job experiences he/she may have at home or in the classroom

LEVEL 1

SS Strand	Standard	Social Studies Level 1
Core Resource: Scott Foresman Social Studies, *All Together* (Gr. 1)		
01.SS.PC	**People and Cultures**	
	01	Compares and contrasts family cultures (e.g. foods, language, religion, traditions) around the world
	02	Summarizes stories and/or songs originating from a variety of cultures
01.SS.TC	**Time and Change**	
	01	Compares and contrasts school life in the past to school life in the present. (eg. Parents/grandparents interviews, class presenters, AK digital archives)
	02	Tells a historical narrative about his/her own family
	03	Understands and makes family connections using the terms niece, nephew, sister, brother, uncle, aunt, cousin, grandparents, mother (mom), father (dad)
01.SS.GEO	**Geography**	
	01	Creates and uses a map of the classroom; map includes title, legend, and directions (north, south, east, west)
01.SS.GOV	**Government**	
	01	Recognizes important United States symbols (etc. Bald Eagle, Statue of Liberty, US Flag, White House)
	02	Creates classroom rules and explains why people do not have the right to do whatever they want (to promote fairness, ensure the common good, and maintain safety)
01.SS.EC	**Economics**	
	01	Knows the names of presidents on a nickel (Thomas Jefferson), dime (Franklin Roosevelt), quarter (George Washington), and penny (Abraham Lincoln)
	02	Writes, tells, or draws and presents information about a job in the school (i.e., teacher, cook, aide) and supplies some facts (duties, pay, work) relevant to that job
	03	Creates a project showing understanding of potential economical resources in local environment (i.e., recipe book of subsistence food, wood for sale sign, bottled water)

LEVEL 2

SS Strand	Standard	Social Studies Level 2
Core Resource: Scott Foresman Social Studies, *All Together* (Gr. 1)		
02.SS.PC	**People and Cultures**	
	01	Compares and contrasts different types of communities (village, city, rural, urban)
	02	Summarizes and restates information gained by listening to and questioning a community member
02.SS.TC	**Time and Change**	
	01	Presents a project on how the community has or might change using the terms past, present, and future (ex. transportation, tools, clothing)
02.SS.GEO	**Geography**	
	01	Creates a class map of the community which includes title, legend, cardinal directions, important landmarks and a map scale
	02	Routinely locates his/her village and any nearby major bodies of water or land features (lakes, rivers, volcanoes, mountains) on a map of Alaska
02.SS.GOV	**Government**	
	01	Describes causes and effects for creating and following local rules (i.e., pollution, vandalism, breaking and entering, curfew, treatment of elders)
	02	Formulates appropriate questions to ask local leaders
02.SS.EC	**Economics**	
	01	Presents information about how community members use local resources through drawing, writing, and/or discussion
	02	Identifies the presidents and historical figures on bills $1 to $20 ($1 –George Washington, $5 – Abraham Lincoln, $10 – Alexandar Hamilton (1st US Secretary of the US Treasury), $20 Andrew Jackson)
	03	Creates a list of appropriate questions to ask while visiting local work sites and places of business

LEVEL 3

SS Strand	Standard	Social Studies Level 3: Alaska Studies
03.SS.PC	**People and Cultures**	
	01	Presents an indigenous migration theory (Berring Land Bridge, Island Hopping) through writing, drawing and/or discussions
	02	Creates a project that compares and contrasts housing, family structures, clothing, language, art, and use of environmental resources between at least two Alaskan Native Groups
	03	Explains reasons for Russian exploration and lists causes and effects of contact
	04	Reads and summarizes an Alaskan Native legend and/or song.
03.SS.TC	**Time and Change**	
	01	Creates a timeline that sequences at least 10 main events from Native Alaskan history to the present (ex. Russian exploration, Molly Hootch case, AK purchase by the United States, ANCSA, etc.)
	02	Presents a project on how tools, technology, and/or transportation has or will change in Alaska using the terms past, present, and future
03.SS.GEO	**Geography**	
	01	Creates a relief map identifying major land features (rivers, deltas, lakes, glaciers, mountains, valleys, volcanoes) and towns of Alaska
	02	Creates a simple map showing where Alaskan Native groups (Athabascan, Aleut, Tlingit, Haida, Inuit, Eyak, Yup'ik, and Tsimshian) reside
03.SS.GOV	**Government**	
	01	Identifies major Alaskan symbols such as Alaskan flag, song, flower, bird etc.
	02	Presents information about a significant Alaskan leader (i.e., William Hensley, Roy Huhndorf, Julie Kitka, Albert Kookesh, Janie Leask, Oliver Leavitt, Byron Mallott, Elizabeth Peratrovich, Benny Benson, Gov. Jay Hammond) through writing, drawings and discussions
	03	Creates a diagram that shows leadership and government roles in Alaska including the following: village or tribal leader, mayor, city council, state courts, governor, state legislature
03.SS.EC	**Economics**	
	01	Identifies natural and manufactured resources exported, imported and used in Alaska
	02	Creates a travel brochure which includes a graph or chart and outlines major attractions (services) and resources (goods) of Alaska

LEVEL 4

SS Strand	Standard	Social Studies Level 4: US History to the Revolutionary War
Core Resource: Scott Foresman, *The United States*, Volume 1		
04.SS.PC	**People and Cultures**	
	01	Compares and contrasts tools, shelter, clothing, artwork and food used by two or more different Native American groups
	02	Creates a diorama highlighting the culture, resources and climate of a Native American group
	03	Describes how the first Americans used resources from their environment to survive
	04	Explains why people migrated to North America (explorers, conquistadors, colonists, missionaries)
	05	Summarizes the impact of explorers (such as Columbus, De Gama, Cortez, Cartier, James Cook, etc.) and the settlement of Europeans on indigenous populations
	06	Describes the relationships between the 13 colonies and the differences between north and south
04.SS.TC	**Time and Change**	
	01	Creates a Venn Diagram comparing pre-colonial (Native Americans) to colonial settlement; Venn Diagram highlights the changes that occurred during colonization
	02	Sequences the major events of the Revolutionary War
04.SS.GEO	**Geography**	
	01	Creates a map of the original 13 colonies
	02	Creates and labels a relief map of the United States that includes major mountain ranges, rivers, oceans, and lakes
04.SS.GOV	**Government**	
	01	Outlines British policies that led to the Revolutionary War
04.SS.EC	**Economics**	
	01	Creates a diagram of imports and exports (including slavery) and the major trade routes of the Colonial Period
	02	Explains the economic cause of the Revolutionary War (Stamp Act, Boston Tea Party, Intolerable Acts)

LEVEL 5

SS Strand	Standard	Social Studies Level 5: US History: Post Revolutionary War
Core Resource: Scott Foresman, *The United States*, Volume 2		
05.SS.PC	**People and Cultures**	
	01	Formulates an opinion based upon reading and interpreting a slavery song, an Abolitionist writing, and a Pro-Slavery piece
	02	Creates a Venn Diagram comparing the views of Northern and Southern Soldiers in the Civil War
	03	Creates a project using a variety of sources that investigates a famous early American figure (e.g. Sitting Bull, Johnny Appleseed, Billy the Kid, Annie Oakley, John Henry)
	04	Writes a narrative from the point of view of a person immigrating to the United States through Ellis Island
	05	Creates a project using a variety of sources that investigates a famous influential person from 1900 to present (ex. Martin Luther King, Adolf Hitler, Franklin Roosevelt, Susan B Anthony, Rosa Parks).
05.SS.TC	**Time and Change**	
	01	Creates a project that demonstrates an understanding of *Manifest Destiny*
	02	Sequences the major events of the Civil War
	03	Creates a timeline of the 20th Century America including major wars, depression, and the industrial revolution
05.SS.GEO	**Geography**	
	01	Creates a map of the Louisiana Purchase and Lewis and Clark Expedition
	02	Identifies the 50 States and their capitals
	03	Identifies the major geographical features and regions of the United States
	04	Uses and calculates scale, longitude, latitude, and time zones on maps
05.SS.GOV	**Government**	
	01	Diagrams and explains the branches of US government
	02	Explains the importance of the Constitution and the Bill of Rights.
05.SS.EC	**Economics**	
	01	Creates a model, diagram, or map showing the economic injustices of a southern plantation
	02	Formulates questions and investigates economic reasons for westward expansion (ex. Gold rush, homesteading, ranching)

LEVEL 6

Social Studies Level 6: World History – Western Hemisphere		
Core Resource: Pearson, *History of Our World*		
06.SS.PC	**06.SS.PC.CL1 People and Cultures: Hunters and Gatherers**	
	01	Describes the lives of hunting and gathering people during the earliest eras of human society (tools, fire, and how early were organized [laws and government])
	02	Describes the early migrations of people among Earth's continents (including the Bering Land Bridge)
	06.SS.PC.CL2 People and Cultures: Agricultural	
	03	Describes the transition from hunter gatherers to sedentary agriculture (domestication of plants and animals)
	04	Describes the importance of the natural environment in the development of agricultural settlements in different locations (e.g., availability of water for irrigation, adequate precipitation, and suitable growing season)
	05	Explains the impact of the Agricultural Revolution (stable food supply, surplus, population growth, trade, division of labor, development of settlements)
	06.SS.PC.CL3 People and Cultures: Religion	
	06	Summarizes at least two different creation myths of cultures of the Western hemisphere (i.e., Aztec, Judeo-Christian)
	06.SS.PC.CL4 People and Cultures: Western Hemisphere	
	07	Compares and contrasts the Mayan, Aztec, and Incan societies, including economy, religion, and role and class structure
	08	Explains the effects of European Imperialism on the Aztec Empire and identifies key figures (Montezuma and Cortez)
	09	Explains the effects of European Imperialism on the Incan Empire and identifies key figures (Tupac Amaru and Pizarro)
	06.SS.PC.CL5 People and Cultures: Greece and Rome	
	10	Describes the rise of Greek city-states (Athens and Sparta) and identifies key figures (Homer and Plato)
	11	Explains the effects of the rise of the Macedonian Empire and identifies key figures (Alexander the Great)
	12	Explains the effects of the rise of the Roman Empire and identifies key figures (Julius Cesar and Hannibal)
06.SS.TC	**Time and Change**	
	01	Creates a timeline that illustrates the rise and fall of the Roman Empire
	02	Creates a timeline of the rise of Christianity which includes the geographical center and spread of Christianity
	03	Explains the causes and spread of the Plague [the Black Death] and analyzes its consequences
06.SS.GEO	**Geography**	
	01	Draws the geographic boundaries of Europe, North American, and South America
	02	Compares and contrasts two maps to show change over time (i.e., population, migration, political boundaries, colonization, plagues/epidemics)
	03	Using historic and modern maps, locates the Macedonian and Roman Empires, and describes their geographic characteristics including physical features
	04	Identifies major river systems and transportation routes of the Western Hemisphere (i.e., Amazon and Atlantic trade routes)including physical features
06.SS.GOV	**Government**	

	01	Compares and contrasts the defining characteristics of a city-state, civilization, and empire
	02	Explains the importance of Greek ideas about democracy to our world today
	03	Defines the system of *republicanism* as used during the Roman Republic
06.SS.EC	**Economics**	
	01	Uses historic and modern maps to locate and describe trade networks among empires (i.e., the Inca Road, the Roman Road system) using the terms: infrastructure, import/export, barter/trade, monetary system
	02	Using the terms *supply* and *demand*, explains how limited resources and human wants cause people to choose some things and give up others
	03	Describes the economic impacts of slavery for Greeks, Romans, Aztecs, or Incas
	04	Defines the terms *class* and *aristocracy* and describes how the tribute system led to the rise of aristocracy

LEVEL 7

SS Strand	Standard	Social Studies Level 7: World History – Eastern Hemisphere
Core Resource: Pearson, *History of Our World*		
07.SS.PC.CL1	**People and Cultures: Asia**	
	01	Uses primary and secondary sources (i.e., historical and modern maps) to locate and describe the geographic spread of the Mongolian Empire and life of leader Genghis Khan
	02	Explains the effects of British imperialism on India
07.SS.PC.CL2	**People and Cultures: Africa**	
	01	Compares and contrasts at least two of the major states/civilizations of East, South, and West Africa (Aksum, Bantu, Swahili, Ghana, Mali, Songhai)
	02	Describes the European exploration of Africa and identifies key explorers
07.SS.PC.CL3	**People and Cultures: Religion**	
	01	Summarizes at least two different creation myths from cultures of the Eastern Hemisphere (i.e., Africa, China)
07.SS.PC.CL4	**People and Cultures: Eastern Hemisphere**	
	01	Describes the significance of major achievements from Indian, Chinese, Japanese, African civilizations in the areas of art (Japan – Haiku), architecture (i.e., Egypt – pyramids); technology (i.e., China – printing) and mathematics (i.e., India – the idea of zero)
	02	Describes the significance of legal codes (the Code of Hammurabi), belief systems (Confucianism, Buddhism, Taoism), caste systems (Hinduism), written languages (hieroglyphics) in the development of human civilization
07.SS.PC.CL5	**People and Cultures: Ancient Empires**	
	01	Identifies the roles and contributions of individuals in Ancient Egypt (Hatshepsut, Ramses, and Cleopatra)
	02	Explains the effects of the rise and fall of the Persian Empire and identifies key figures (Darius and Alexander the Great)
	03	Explains the effects of the rise of the Mughal Empire and identifies key figures (Babur)
07.SS.TC	**Time and Change**	
	01	Creates a timeline that illustrates the rise and fall of the Persian Empire
	02	Creates a timeline that illustrates the rise and fall of the Mongolian Empire
	03	Creates a timeline that illustrates the rise and fall of the Ottoman Empire
	04	Creates a timeline of the rise of Islam and its geographical center
07.SS.GEO	**Geography**	
	01	Identifies major river systems and transportation routes of the Eastern Hemisphere (i.e., Nile, Tigris/Euphrates, Indus, and Yangtze)
	02	Maps the geographic boundaries of Africa, Asia, and Australia
	03	Maps the colonization of Africa over time by European nations (i.e., Belgium, France, Germany, Italy, Portugal, Spain, United Kingdom)
07.SS.GOV	**Government**	
	01	Compares and contrasts matriarchal and patriarchal systems
	02	Diagrams the caste systems of India
	03	Identifies and explains two examples of tribal interactions in Africa
07.SS.EC	**Economics**	
	01	Analyzes trade along the Silk Road and the trans-Saharan trade in gold and salt

	02	Analyzes the development of an organized slave trade within Africa (i.e., Egyptian and West African slavery)
	03	Describes the slavery systems of Egypt and the Middle East
	04	Identifies and describes the significance of two historical natural resources from Africa and Asia (Africa – gold, salt, rubber; and Asia– silk, tea, spices)
	05	Compares and contrasts three different subsistence strategies (Hunter gatherer [foraging], pastoralist, agrarian)
	06	Defines *supply* and *demand* and compares and contrasts barter/trade systems with monetary systems

LEVEL 8

SS Strand	Standard	Social Studies Level 8: US Civics and Government / Alaska History and Government
Core Resource: Pearson, *Macgruders American Government*		
08.SS.CG	**US Civics and Government**	
	01	Distinguishes between a government and a nation
	02	Explains the purpose and functions of government (i.e., common defense, protection of property, justice, diplomatic relations)
	03	Compares and contrasts different forms of government both in theory and practice (democracy, autocracy, communist state, socialist state)
	04	Defines sovereignty and the three "unalienable rights" listed in the Declaration of Independence
	05	Identifies and explains 6 basic principles in the U.S. Constitution (popular sovereignty, limited government, separation of powers, checks and balances, judicial review and federalism)
	06	Describes the divisions of power between the federal, state, and local governments and the role/function of each
	07	Explains the rights and responsibilities of civics as it applies to citizenship
	08	Demonstrates an understanding of the following concepts: equality, justice, liberty and privacy
	09	Researches and reports on at least two issues, problems, or concepts in constitutional law
	10	Explains how a bill becomes law
	11	Explains the different components and participants of the trial process
	12	Researches and reports on at least one Supreme Court case
	13	Compares and contrasts 5 different political points of view and their characteristics across the left-center-right political spectrum (i.e., conservative, liberal, socialist, communist, anarchist, etc.)
	14	Identifies the role of political parties and campaigns in elections
	15	Explains the electoral process
	16	Writes a letter, article, editorial, or persuasive essay to influence those in power in the local, state, or national community
08.SS.AK	**Alaska History & Government**	
	01	Uses a variety of sources to analyze the historical contributions and/or influences of significant individuals, groups, and organizations of indigenous Alaskans before western contact (i.e. specific Native AK cultures, traditional Native governance, traditional stories and traditions)
	02	Uses a variety of sources to analyze the impact of the relationships between AK Natives and Russians (i.e. Russian Orthodox Church, early fur traders, Russian American Companies, enslavement, and Creoles).
	03	Identifies patterns of transformation, competition, supply and demand, and subsistence activities in response to the use of natural resources during the Colonial Russian Period (1741-1867) (i.e. fur, minerals, whaling)
	04	Compares and contrasts tribal and western concepts of land ownership and how acting upon those concepts contributes to changes in land use, control, and ownership
	05	Describes impacts the Treaty of Cession, the Marshall Trilogy, Mining Act of 1872, Organic Act of 1884 had on Alaskans
	06	Describes at least one gold rush (Juneau, Klonkike, Nome) and its impact on natural resource development, land management, and social aspects of Alaskan communities

	07	Explains the significance of the Nelson Act of 1905 on education and the subsequent history of education in Alaska (include role of Sheldon Jackson, Tobeluk vs. Lind Case [Molly Hootch])
	08	Explains Alaskan's quest for self determination (i.e., full rights as US citizens) through the statehood movement
	09	Draws conclusions about the significance of natural resources (i.e., fisheries, timber, Swanson River oil discovery, North Slope oil, "sustained yield" in the AK Constitution) in Alaska's development
	10	Explains the impact of military actions on Alaskan communities (e.g., Naval bombardment of Angoon, Aleut internment, WWII [Attu/Kiska], military expeditions, nuclear testing)
	11	Describes the historical basis of federal recognition of tribes, the ongoing nature and diversity of tribal governance, and the plenary power of Congress
	12	Explains Native efforts toward civil and land rights (i.e., founding of AK Native Brotherhood, Alaska Native Sisterhood, Alaska Federation of Natives, and Tanana Chiefs) and challenge to status quo (i.e., appeals to the Russian government, Ward Cove Packing Co. Case, anti-discrimination acts, women's suffrage)
	13	Describes federal policies and legislation that recognized Native rights (AK Citizenship Act, Tlingit-Haida Jurisdiction Act, Indian Citizenship Act of 1925, AK Reorganization Act, ANCSA)
	14	Describes the importance of at least three significant individuals in modern Alaska history and/or government: Judge Wichersham, William Paul, Elizabeth Peratrovich, Ernest Gruening, William Hensley, Eben Hopson, Howard Rock,Gov. Jay Hammond, Ted Stevens, Katie John
	15	Describes ANCSA and ANILCA and their impact on the state
	16	Lists and describes the formation of Alaska Native Corporations and explains their impact on state and local economies
	17	Creates a timeline that describes key turning points in recent Alaska history (building of Prudoe Bay pipeline, Molly Hootch case, ANCSA, ANILCA, ANWR, natural and manmade disasters, establishment of corporations, Permanent Fund Dividend)

LEVEL 9

SS Strand	Standard	Social Studies Level 9: Early US History
Core Resource: Pearson, *United States History*		
09.SS.PC.CL1	**People and Cultures: Pre-Columbian America**	
	01	Describes the cultures of the North American continent including: Paleo-Indians, Moundbuilders, Hohokam, and Anasazi
	02	Compares and contrasts at least two Native American culture regions (i.e., Arctic, Subarctic, Northwest coast, Great Basin, Southwest, Great Plains, Southeast, and Northeast) including lifestyle, political leadership, and subsistence
09.SS.PC.CL2	**People and Cultures: European Exploration and Conquest**	
	01	Compares and contrasts the motivations and goals of different European groups in coming to North America (i.e., Spain, Portugal, France, and Britain)
	02	Describes the rise of early colonies (i.e., Roanoke, Jamestown, Plymouth) and discusses key figures (John Smith, Powhatan, John Winthrop, William Penn)
	03	Explains the importance of religion in early colonies and the consequences of different perspectives of religious faith (i.e., European-Native relations, the Salem witch trials, Quakers, first Great Awakening)
	04	Describes Native American and African American rebellions against European settlers (i.e., Pontiac's Rebellion and Stono Rebellion)
09.SS.PC.CL3	**People and Cultures: Revolutionary America**	
	01	Explains the causes of the American War for Independence
	02	Describes key figures and their roles in the American War for Independence (Samuel Adams, John Adams, Patrick Henry, George Washington, Thomas Jefferson, Paul Revere, Thomas Paine, Ben Franklin, King George, Marquis de Lafayette)
09.SS.PC.CL4	**People and Cultures: The New Nation**	
	01	Describes the importance of religion in early America (i.e., the Second Great Awakening, temperance movement)
	02	Describes the rise and importance of the Antislavery (Abolitionist) Movement and identifies key figures (Nat Turner, Frederick Douglass, John Brown, Dred Scott, Harriet Tubman, and Harriet Beecher Stowe)
	03	Compares and contrasts differing perspectives on slavery (antislavery and proslavery)
	04	Explains the causes of the Mexican-American War and identifies key figures (Sam Houston and Santa Ana)
	05	Describes the rise and importance of the Women's Movement and identifies key figures (Sojourner Truth, Lucretia Mott, and Elizabeth Stanton)
09.SS.PC.CL5	**People and Cultures: Civil War and Reconstruction**	
	01	Explains the causes of the U.S. Civil War (i.e., slavery, state's rights, westward expansion, the 1860 election of Lincoln)
	02	Identifies and explains importance of the key figures of the U.S. Civil War (Abraham Lincoln, Jefferson Davis, Ulysses Grant, "Stonewall" Jackson, Robert E. Lee)
	03	Analyzes primary sources of Abraham Lincoln in relation to the U.S. Civil War (i.e., A House Divided Speech, the Gettysburg Address, the Emancipation Proclamation, the 13th Amendment)
	04	Analyzes political cartoons from the Reconstruction and explains differing perspectives
09.SS.TC	**Time and Change**	

	01	Describes the Columbian Exchange and its impact on Europeans, Native Americans, and Africans (i.e., disease, crops, and trade)
	02	Creates a timeline of the major events of the American War for Independence
	03	Defines *Manifest Destiny* and explains its impact on westward migration with specific attention to the displacement of Native American tribes (i.e., Treaty of Fort Laramie)
	04	Creates a timeline of the major events of the U.S. Civil War
	05	Defines *infrastructure* and describes the rebuilding and institutional consequences of the Nation after the U.S. Civil War (i.e., the Freedmen's Bureau and the Ku Klux Klan)
09.SS.GEO	**Geography**	
	01	Maps the colonies of Spain, France, and England in North America
	02	Maps the Trans-Atlantic Slave Trade routes and destinations
	03	Maps the routes that settlers traveled during Manifest Destiny (i.e., the Oregon Trail, the Mormon Trail, the California Trail)
	04	Maps the Confederacy states, the Union, and the Border States during the U.S. Civil War
09.SS.GOV	**Government**	
	01	Reads and summarizes the meaning and significance of the Mayflower Compact
	02	Describes the political interactions between the colonies, Native American tribes, British and French (i.e., the French and Indian War)
	03	Analyzes historical documents that influenced the creation of the U.S. Constitution (i.e., the Magna Carta, the English Bill of Rights, Articles of Confederation, Federalist Papers)
	04	Compares and contrasts the perspectives of "patriots" and "loyalists" in Revolutionary America
	05	Analyzes the Declaration of Independence and reconstructs the literal meaning (i.e., principles and grievances)
	06	Briefly describes the Federal Government created by the United States Constitution (i.e., three branches of government, checks and balances, bicameral legislature), the Bill of Rights (first ten amendments to the Constitution), and the 14th and 15th Amendments
09.SS.EC	**Economics**	
	01	Analyzes the push and pull factors that led European groups to begin exploration
	02	Explains the economic factors which led to the Trans-Atlantic Slave Trade and compares and contrasts the economics of slavery and indentured servitude
	03	Analyzes the push and pull factors that led to Manifest Destiny (westward migration) (i.e., the California Gold Rush)
	04	Explains the economic factors which led to the U.S. Civil War (i.e., slavery and westward expansion) and the Union victory (i.e., industrialization, large population, resources, military leadership, Emancipation Proclamation)
	05	Compares and contrasts slavery and sharecropping

LEVEL 10

SS Strand	Standard	Social Studies Level 10: Late US History
Core Resource: Pearson, *United States History*		
10.SS.PC.CL1	**People and Cultures: Industrial Revolution & the Gilded Age (1870 to 1914)**	
	01	Examines the rise of the Industrial Revolution in America and identifies key figures (Andrew Carnegie, John Rockefeller, Thomas Edison)
	02	Describes daily life during the Gilded Age and working conditions that led to organized labor movements (i.e., child labor, sweat shops, long working hours, unsafe conditions, low pay)
	03	Examines major strikes of the late 1800s (i.e., Railroad strikes, Haymarket Square, Pullman strike)
10.SS.PC.CL2	**People and Cultures: WWI Era (1914-1919)**	
	01	Explains the primary causes of WWI (militarism, alliances, imperialism, and nationalism)
	02	Describes the aims of Wilson's Fourteen Points and the League of Nations
	03	Analyzes changes in the home front during WWI (i.e., the influenza pandemic, the First Red Scare)
10.SS.PC.CL3	**People and Cultures: Reform Movements (1920-1928)**	
	01	Examines the Women's Movement (i.e., temperance movement, suffrage, Margaret Sanger, 19th Amendment, "flapper's")
	02	Explains the causes and effects of Prohibition and identifies key figures and ideas (Carrie Nation, Al Capone, Volstead Act, speakeasies)
10.SS.PC.CL4	**People and Cultures: WWII Era (1941-1945)**	
	01	Explains the causes of WW II (i.e., Treaty of Versailles, German imperialism, bombing of Pearl Harbor)
	02	Explains the changing role of Women during WWII (i.e., Rosie the Riveter, Women's Army Corps)
	03	Explains the contributions of African-Americans and Native Americans during WWII (Tuskegee Airman, Codetalkers)
	04	Examines the internment of Japanese Americans during WWII
	05	Examines Alaska's role in WWII (i.e., Battle of Attu and Kiska, relocation of Alaskan Natives)
10.SS.PC.CL5	**People and Cultures: Cold War to the Modern Era (1945-present)**	
	01	Compares and contrasts two decades from the Cold War
	02	Examines the Cuban Missile Crisis and identifies key figures (John F. Kennedy, Nikita Khrushchev, and Fidel Castro)
	03	Examines the causes of the Vietnam War (i.e., domino theory, Gulf of Tonkin resolution) and the growth of the anti-war/counterculture movement in America in the 1960s and 1970s
	04	Examines the rise of Republicanism (i.e, Ronald Reagan) and the end of the Cold War
	05	Identifies and explains significance of key figures of the Civil Rights Movements (Martin Luther King Jr., Rosa Parks, Malcolm X, Little Rock 9, Cesar Chavez, Betty Friedan)

	06	Identifies and explains significance of key figures of the Modern Era (George H.W. Bush, Saddam Hussein, Bill Clinton, George W. Bush, Osama Ben Ladin, Barrack Obama)
10.SS.TC	**Time and Change**	
	01	Uses census data from 1790-1940 to describe population changes (i.e., composition, distribution, density)
	02	Creates a timeline of the major inventions of the Industrial Revolution (i.e., Bessemer process, telegraph, sewing machine, light bulb, internal combustion engine)
	03	Creates a timeline of U.S. Imperialism and expansionism
	04	Maps the area known as the Dust Bowl
	05	Analyzes the Holocaust
	06	Creates a timeline of the major events of the Cold War (i.e., Berlin airlift, Korean War, HUAC Hearings, Sputnik, Vietnam War, Fall of the Berlin Wall)
	07	Compares and contrasts the coming home of at least two groups of Veteran's (i.e., WWII, Vietnam, Iraq)
	08	Describes major acts of Terrorism (i.e., U.S.S. Cole, Oklahoma City bombing, 9/11)
10.SS.GEO	**Geography**	
	01	Describes major trends in urban and industrial transformation in America (i.e., the development of cities, growth of commerce and transportation)
	02	Compares and contrasts the changes in political boundaries before and after World War I
	03	Maps the participating countries during WWII (Axis and Allied powers)
	04	Maps countries in East and Southeast Asia reflecting post WWII political boundaries (North Korea, South Korea, China, Japan, Vietnam, Laos, Cambodia, Myanmar/Burma, Thailand, Philippines, and Indonesia)
10.SS.GOV	**Government**	
	01	Compares and contrasts the Monroe Doctrine with Roosevelt's "big stick" diplomacy
	02	Explains the Manhattan Project and the decision to drop the Atomic Bomb
	03	Compares and contrasts treaties after WWI (Treaty of Versailles) and after WWII (Yalta and Potsdam conferences)
	04	Describes the effects of the assassination of JFK and the presidential succession
	05	Compares and contrasts Plessy vs. Ferguson and Brown v Board of Education
	06	Explains the significance of Watergate (i.e., the impeachment and eventual resignation of Nixon)
	07	Explains the consequences of 9/11 (i.e., creation of the Dept of Homeland Security, Patriot Act, Afghanistan War, Iraq War, etc.)
10.SS.EC	**Economics**	
	01	Defines and describes the concepts of horizontal and vertical integration and its relation to monopolies
	02	Describes the economic factors that led to the Industrial Revolution in America (i.e., the rise of organized labor, the assembly line, and capital)
	03	Explains the push and pull factors that effected immigration from 1870 to 1910
	04	Explains the causes of the Great Depression (i.e., stock market crash, Hawley-Smoot Tariff) and the Government's response to help alleviate the problems (i.e., the New Deal)
	05	Analyzes issues of supply and demand during WWII (i.e., rationing, scarcity)
	06	Analyzes the growth of internet business

LEVEL 11

SS Strand	Standard	Social Studies Level 11: World History
Core Resource: Pearson, *World History*		
11.SS.PC.CL1	**People and Cultures: Europe**	
	01	Describes and maps key Renaissance explorers, including Marco Polo (Italy) and Magellan (Portugal)
	02	Explains the origins, growth, and consequences of the Protestant Reformation including key figures (Gutenberg, Martin Luther, Johannes John Calvin, John Wycliffe, Jan Hus)
	03	Explains the origins, growth, and consequences of the Enlightenment and Scientific Revolution including key figures (Voltaire, John Locke, Galileo, Sir Isaac Newton, and Copernicus)
	04	Explains the origins, growth, and consequences of the French Revolution and key figures (Robespierre and Napoleon)
	05	Explains the causes of the Russian Revolution (i.e., monarchy, pogroms) and discuss key figures (Lenin and Stalin)
11.SS.PC.CL2	**People and Cultures: Africa and the Middle East**	
	01	Explains at least one African resistance movement to European imperialism (i.e., Algeria, Zulu, Ethiopia)
	02	Analyzes the modern Palestine-Israel conflict
	03	Analyzes the causes and consequences of the Iranian Islamic Revolution and identifies key figures (i.e., Mohammed Mosaddeq, Shah Pahlavi, Ayotallah Khomeini, Mahmoud Ahmadinejad)
11.SS.PC.CL3	**People and Cultures: India and China**	
	01	Explains the causes of British imperialism in India, Indian resistance movements, and Indian independence (i.e., Ghandi)
	02	Explains the causes and effects of the Opium Wars
	03	Compares and contrasts the Taiping Rebellion and Boxer Uprising
	04	Explains the causes and consequences of the Chinese Revolution (i.e., communism) and identifies key figures (Mao Zedong)
11.SS.PC.CL4	**People and Cultures: South America**	
	01	Describes pre and post revolutionary Latin America (i.e., Mexico, Haiti, Venezuela, Brazil) and identifies key figures (Hidalgo, Toussaint L'Ouverture, Simone Bolivar, Don Pedro)
	02	Analyzes present day issues in South American (i.e., drugs, international indebtedness) and identifies key figures (i.e., Hugo Chavez)
11.SS.TC	**Time and Change**	
	01	Compares and contrasts the art and literature of two eras (i.e., the Renaissance, Baroque, Romantic, Modern)
	02	Explains the origins, growth, and consequences of the Industrial Revolution and key inventions (steam engine and cotton gin) in a global context
	03	Describes the indigenous cultures of Australia and explains the push and pull factors of European imperialism (i.e., the penal colony)

	04	Compares and contrasts the Panama and Suez Canals and their significance in world trade
	05	Analyzes modern genocides (i.e., Rwanda, Darfur, Serbia, Congo)
	06	Uses census data from the last 50 years to describe population changes in India and China
11.SS.GEO	**Geography**	
	01	Compares and contrasts two maps to show change over time (i.e., population, migration, political boundaries, colonization, plagues/epidemics)
	02	Maps the military conquests of Napoleon and compare to modern European political boundaries
	03	Compares and contrasts at least two famines in history (i.e., China, France, India, Ireland, Soviet Union) in relation to their geographic location
	04	Maps the partition of Africa during European imperialism to 1914 (i.e., France/Algeria, Britain/South Africa & Kenya, Portugal/Angola, Belgium/Congo)
	05	Locates the countries of the Middle East (i.e., Iraq, Iran, Syria, Israel, Jordan, Saudi Arabia, Kuwait, Afghanistan, Lebanon, Egypt, Turkey, Yemen, Oman, UAE, Qatar, and Bahrain) on a map
	06	Locates all the countries on the continent of Africa (including Madagascar)
	07	Maps the member nations of OPEC and charts world oil consumption
11.SS.GOV	**Government**	
	01	Compares and contrasts at least two systems of government (i.e., democracy, communism, socialism)
	02	Analyzes a current crisis in Africa and develops a potential solution (i.e., famine, AIDS, civil wars, genocide)
11.SS.EC	**Economics**	
	01	Explains how limited resources and human wants cause people to choose some things and give up others
	02	Describes how natural resources affected the growth of the Industrial Revolution and names one industry that was affected (i.e., textiles, transportation)
	03	Defines infrastructure and identifies key elements (roads, transportation, communication, trade/money)
	04	Analyzes current economic issues in Africa in relation to early 20th century European imperialism
	05	Explains China's current trend towards capitalism (i.e., Walmart) as a consequence of globalization (i.e., outsourcing, multi-national corporation)
	06	Examines the rise of the European Union and its economic consequences (i.e., the euro, freer flow of capital, labor, services, and trade)

LPSD SCIENCE STANDARDS

LEVEL 0

SC Strand	Standard SCIENCE LEVEL 0
Core Resources: Next Generation Science Standards; Mystery Science	
00.SC.FI	**Forces and Interactions: Pushes and Pulls**
	00.SC.FI.PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other. Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.
	00.SC.FI.PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn. Assessment does not include friction as a mechanism for change in speed.
00.SC.ECO	**Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment**
	00.SC.ECO.LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive. Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and that all living things need water.
	00.SC.ECO.ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to met their needs. Examples of plants and animals changing their environment could inclue a squirrel digs in the ground to hid its food, and tree roots can break concrete, or local plant and animal observations.
	00.SC.ECO.ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; grasses need sunlight so they often grow in meadows. Plants, animals, and their surrounding make up a system.
	00.SC.ECO.ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the environment. Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.
00.SC.WC	**Weather and Climate**
	00.SC.WC.PS3-1 Make observations to determine the effect of sunlight on Earth's surface.

	Local observation of duration of sunlight. Examples of Earth's surface could include sand, soil, rocks, and water. *Assessment of temperature is limited to relative measures such as warmer and cooler.*
	00.SC.WC.PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. Examples of structures could include umbrellas, canopies, and tents that minimize the warming effects of the sun. Explain the characteristics of the structure and their effect on the temperature.
	00.SC.WC.ESS2-1 Use and share observations of local weather conditions to describe patterns over time. Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months. *Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.*
	00.SC.WC.ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. Emphasis is on local forms of severe weather.
00.SC.ED	**Engineering Design**
	00.SC.ED.ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
	00.SC.ED.ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Explain how the model functions to solve the problem.
	00.SC.ED.ETS1-3 Analyze and discuss data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

LEVEL 1

SC Strand	Standard SCIENCE LEVEL 1
Core Resources: NextGen Science Standards; Mystery Science	
01.SC.WLS	**Waves: Light and Sound**
	01.SC.WLS.PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork or a person making a hunting call.
	01.SC.WLS.PS4-2 Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated. Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.
	01.SC.WLS.PS4-3 Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light. Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror). *Assessment does not include the speed of light.*
	01.SC.WLS.PS4-4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats. Explain how the device works. *Assessment does not include technological details for how communication devices work.*
01.SC.SFI	**Structure, Function, and Information Processing**
	01.SC.SFI.LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells (e.g., protective helmets), acorn shells, mollusks, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; detecting intruders by mimicking eyes and ears; use of camouflage, or tools such as snowshoes. Explain how the solution solves the problem described.
	01.SC.SFI.LS1-2 Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).
	01.SC.SCI.LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and,

	a particular breed of dog looks like its parents but is not exactly the same. *Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.*
01.SC.SS	**Space Systems: Patterns and Cycles**
	01.SC.SS.ESS1-1 Use observations of the sun, moon, stars, and tides to describe patterns that can be predicted. Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day. *Assessment of star patterns is limited to stars being seen at night and not during the day. Students not required to know the mechanisms that control tides.*
	01.SC.SS.ESS1-2 Make and graph observations at different times of year to relate the amount of daylight to the time of year, and graph findings. Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall. *Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.*
01.SC.ED	**Engineering Design**
	01.SC.ED.ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
	01.SC.ED.ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Explain how the model functions to solve the problem.
	01.SC.ED.ETS1-3 Analyze and discuss data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

LEVEL 2

SC Strand	Standard SCIENCE LEVEL 2
Core Resources: NextGen Science Standards	
02.SC.SPM	**Structure and Properties of Matter**
	02.SC.SPM.PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.
	02.SC.SPM.PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Examples of properties could include, strength, flexibility, hardness, texture, and absorbency. *Assessment of quantitative measurements is limited to length.*
	02.SC.SPM.PS1-3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. Examples of pieces could include blocks, building bricks, or other assorted small objects.
	02.SC.SPM.PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and burning wood.
02.SC.ECO	**Interdependent Relationships in Ecosystems: Animals, Plants, and their Environment**
	02.SC.ECO.LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow. *Assessment is limited to testing one variable at a time.*
	02.SC.ECO.LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. Examples can include those components that mimic the natural structure of an animal that helps it disperse seeds (e.g., hair that snares seeds, squirrel cheek pouches that transport seeds) or that mimic the natural structure of an animal that helps it pollinate plants (e.g., bees have fuzzy bodies to which pollen sticks, hummingbirds have bills that transport pollen). Explain how the model disperses seeds or pollinates plants.
	02.SC.ECO.LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. Emphasis is on the diversity of living things in each of a variety of different habitats. *Assessment does not include specific animal and plant names in specific habitats.*
02.SC.ES	**Earth's Systems: Processes that Shape the Earth**
	02.SC.ES.ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly. Examples of events and timescales could include volcanic explosions, earthquakes, tsunamis, avalanches, and landslides, which happen quickly and events such as erosion of rocks and movement of glaciers, which occur slowly. *Assessment does not include quantitative measurements of timescales.*
	02.SC.ES.ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land. Discuss the solutions for controlling erosion.

	02.SC.ES.ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area. Discuss the features of the models. *Assessment does not include quantitative scaling in models.*
	02.SC.ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.
02.SC.ED	**Engineering Design**
	02.SC.ED.ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
	02.SC.ED.ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. Explain how the model functions to solve the problem.
	02.SC.ED.ETS1-3 Analyze and discuss data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

LEVEL 3

SC Strand	Standard SCIENCE LEVEL 3
Core Resources: NextGen Science Standards; Mystery Science	
03.SC.FI	**Forces and Interactions**
	03.SC.FI.PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all. *Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.*
	03.SC.FI.PS2-2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw. *Assessment Boundary: Assessment does not include technical terms such as period and frequency.*
	03.SC.FI.PS2-3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force. *Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.*
	03.SC.FI.PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets. Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.
03.SC.ECO	**Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms**
	03.SC.ECO.LS2-1 Construct an argument that some animals form groups that help members survive. Alaska examples may include wolves, musk ox, caribou, and schools of fish.
	03.SC.ECO.LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms. *Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.*
	03.SC.ECO.LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.

	03.SC.ECO.LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms. Solution may be created or provided. Students evaluate the solution to the problem to determine the merit of the solution. Students describe how well the proposed solution meets the given criteria and constraints to reduce the impact of the problem created by the environmental change in the system. *Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change*.
03.SC.IVT	**Inheritance and Variation of Traits: Life Cycles and Traits**
	03.SC.IVT.LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. Changes organisms, such as salmon, wooly bear caterpillar, frogs, go through during their life form a pattern. *Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction*.
	03.SC.IVT.LS3-1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans. *Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.*
	03.SC.IVT.LS3-2 Use evidence to support the explanation that traits can be influenced by the environment. Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; a pet dog that is given too much food and little exercise may become overweight; and, comparison of plants and animals in Arctic regions versus non-Arctic regions.
	03.SC.IVT.LS4-2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.
03.SC.WC	**Weather and Climate**
	03.SC.WC.ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. Examples of data at this grade level could include student-generated graphs of average temperature, precipitation, and wind direction. *Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change*.
	03.SC.WC.ESS2-2 Obtain and combine information to describe climates in different regions of the world.
	03.SC.WC.ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. Examples of design solutions to weather-related hazards could include barriers to prevent storm erosion or flooding (e.g., from storm surges), or buildup of snow drifts; wind resistant roofs, lightning rods, and other weather hazards such as white-out conditions.

03.SC.ED	Engineering Design
	03.SC.ED.ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
	03.SC.ED.ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
	03.SC.ED.ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

LEVEL 4

SC Strand	Standard SCIENCE LEVEL 4
Core Resources: NextGen Science Standards; Mystery Science	
04.SC.ENE	**Energy**
	04.SC.ENE.PS3-1 Use evidence to construct an explanation relating the speed of an object to the energy of that object. *Assessment does not include quantitative measures of changes in the speed of an object or on any precise or quantitative definition of energy*.
	04.SC.ENE.PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. *Assessment does not include quantitative measurements of energy*.
	04.SC.ENE.PS3-3 Ask questions and predict outcomes about the changes in energy that occur when objects collide. Emphasis is on the change in the energy due to the change in speed, not on the forces, as objects interact. Examples may be at different scales, such as bouncing balls, car crashes, and plate tectonics (e.g., collisions of land to land, ice to ice, and ice to land). *Assessment does not include quantitative measurements of energy*.
	04.SC.ENE.PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. Examples of devices could include electric circuits that convert electrical energy into motion energy of a vehicle, light, or sound; and, a passive solar heater that converts light into heat. Examples of constraints could include the materials, cost, or time to design the device. *Devices should be limited to those that convert motion energy to electric energy or use stored energy to cause motion or produce light or sound*.
	04.SC.ENE.ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. Examples of renewable energy resources could include wind energy, water behind dams, tidal, geothermal, and sunlight; non-renewable energy resources are fossil fuels and fissile materials. Examples of environmental effects could include loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.
04.SC.WAV	**Waves**
	04.SC.WAV.PS4-1 Develop and use a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves. *Assessment does not include interference effects, electromagnetic waves, non-periodic waves, or quantitative models of amplitude and wavelength*.
	04.SC.WAV.PS4-3 Generate and compare multiple solutions that use patterns to transfer information. Examples of solutions could include drums sending coded information through sound waves, using a grid of 1's and 0's representing black and white to send information about a picture, and using Morse code to send text.
04.SC.SFI	**Structure, Function, and Information Processing**

	04.SC.SFI.PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. *Assessment does not include knowledge of specific colors reflected and seen, the cellular mechanisms of vision, or how the retina works*.
	04.SC.SFI.LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, skin, gills, scales, and bones. *Assessment is limited to macroscopic structures within plant and animal systems.*
	04.SC.SFI.LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. Emphasis is on systems of information transfer. Examples may include salmon homing, responses of marine invertebrates to sound and smell, and sonar communication among whales and other marine mammals. *Assessment does not include the mechanisms by which the brain stores and recalls information or the mechanisms of how sensory receptors function*.
04.SC.ES	**Earth's Systems: Processes that Shape the Earth**
	04.SC.ES.ESS1-1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. Examples of evidence from patterns could include rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock. *Assessment does not include specific knowledge of the mechanism of rock formation or memorization of specific rock formations and layers. Assessment is limited to relative time*.
	04.SC.ES.ESS2-1 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wind, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow. *Assessment is limited to a single form of weathering or erosion*.
	04.SC.ES.ESS2-2 Analyze and interpret data from maps to describe patterns of Earth's features. Maps can include topographic maps of Earth's land and ocean floor, as well as maps of the locations of mountains, continental boundaries, volcanoes, and earthquakes.
	04.SC.ES.ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity. *Assessment is limited to earthquakes, floods, tsunamis, and volcanic eruptions.*
04.SC.ED	**Engineering Design**
	04.SC.ED.ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
	04.SC.ED.ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
	04.SC.ED.ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

LEVEL 5

SC Strand	Standard SCIENCE LEVEL 5
Core Resources: NextGen Science Standards; Mystery Science	
05.SC.SPM	**Structure and Properties of Matter**
	05.SC.SPM.PS1-1 Develop and use a model to describe that matter is made of particles too small to be seen. Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water. *Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles*.
	05.SC.SPM.PS1-2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances. *Assessment does not include distinguishing mass and weight.*
	05.SC.SPM.PS1-3 Make observations and measurements to identify materials based on their properties. Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property. *Assessment does not include density or distinguishing mass and weight*.
	05.SC.SPM.PS1-4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. Share finding from the investigation.
05.SC.ECO	**Matter and Energy in Organisms and Ecosystems**
	05.SC.ECO.PS3-1 Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun. Examples of models could include diagrams, and flow charts.
	05.SC.ECO.LS1-1 Support an argument that plants get the materials they need for growth chiefly from air and water. Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.
	05.SC.ECO.LS1-2 Develop and describe a model that describes the movement of matter among plants, animals, decomposers, and the environment. Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth. *Assessment does not include molecular explanations*.
05.SC.ES	**Earth's Systems**
	05.SC.ES.ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere (water), cryosphere (ice), and/or atmosphere interact. Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, cryosphere, atmosphere, and biosphere are each a system. *Assessment is limited to the interactions of two systems at a time*.

	05.SC.ES.ESS2-2 Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. Examples could include lakes, rivers, glaciers, sea ice, oceans, groundwater, and polar ice caps. Represent and interpret the data represented by the graphical displays. *Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere*.
	05.SC.ES.ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
05.SC.SS	**Space Systems: Stars and the Solar System**
	05.SC.SS.PS2-1 Support an argument that the gravitational force exerted by Earth on objects is directed toward the center of the Earth. "Down" is a local description of the direction that points toward the center of the spherical Earth. *Assessment does not include mathematical representation of gravitational force.*
	05.SC.SS.ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. *Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, and stage).*
	05.SC.SS.ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, daily appearance of the moon, and the seasonal appearance of some stars in the night sky. Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months. *Assessment does not include causes of seasons.*
05.SC.ED	**Engineering Design**
	05.SC.ED.ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
	05.SC.ED.ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
	05.SC.ED.ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

LEVEL 6

SC Strand	Standard SCIENCE LEVEL 6
Core Resources: NextGen Science Standards; Savvas Elevate Science	
06.SC.PS	**Physical Sciences**
	06.SC.PS.PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures. Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures, or computer representations showing different molecules with different types of atoms.
	06.SC.PS.PS1-4 Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. Emphasis is on qualitative molecular-level models of solids, liquids, and gasses to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawing and diagrams. Examples of particles could include molecules or inert atoms. Examples of pure substances could include water, carbon dioxide, and helium.
	06.SC.PS.PS1-2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogen chloride.
	06.SC.PS.PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. Emphasis is on descriptive relationships between kinetic energy and mass separately from kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different sizes of rocks downhill, and getting hit by a wiffle ball versus a tennis ball.
	06.SC.PS.PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. Emphasis is on relative amounts of potential energy, not on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, and written descriptions of systems.
	06.SC.PS.PS3-3 Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. Examples of devices could include an insulated box, a solar cooker, a Styrofoam cup, or traditional seasonal clothing or dwellings.
	06.SC.PS.PS3-4 Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. Examples of experiments could include comparing final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature, the temperature change of samples of different materials with the same mass as they cool or heat in

	the environment, or the same material with different masses when a specific amount of energy is added.
	06.SC.PS.PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. Examples of empirical evidence used in arguments could include an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of object.
06.SC.ES	**Earth and Space Sciences**
	06.SC.ES.ESS2-2 Construct and present an evidence-based explanation of how geoscience processes have changed Earth's surface at varying time and spatial scales. Emphasis is on how processes change Earth's surface at time and spatial scales that can be large (such as slow plate motions or the uplift of large mountain ranges) or small (such as rapid landslides or microscopic geochemical reactions), and how many geoscience processes (such as earthquakes, volcanoes, and meteor impacts) usually behave gradually but are punctuated by catastrophic events. Examples of geoscience processes include surface weathering and deposition by the movements of water, ice, and wind. Emphasis is on geoscience processes that shape local geographic features, where appropriate. Alaskan examples should include locally significant landforms including coastal or ocean seafloor structures.
	06.SC.ES.ESS2-3 Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. Examples of data include similarities of rock and fossil types on different continents, the shapes of the continents (including continental shelves), and the locations of ocean structures (such as ridges, fracture zones, and trenches). *Paleomagnetic anomalies in oceanic and continental crust are not assessed*.
	06.SC.ES.ESS2-1 Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. Emphasis is on the processes of melting, crystallization, weathering, deformation, and sedimentation, which act together to form minerals and rocks through the cycling of Earth's materials. *Assessment does not include the identification and naming of minerals*.
	06.SC.ES.ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions. Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within probabilistic ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as with condensation). *Assessment does not include recalling the names of cloud types or weather symbols used on weather maps or the reported diagrams from weather stations*.]
	06.SC.ES.ESS2-6 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations. *Assessment does not include the dynamics of the Coriolis effect*.

	06.SC.ES.ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts). Alaskan examples should include but are not limited to tsunamis, storm surges, landslides, and earthquakes.
06.SC.LS	**Life Sciences**
	06.SC.LS.LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. Emphasis is on developing evidence that living things are made of cells, distinguishing between living and non- living things, and understanding that living things may be made of one cell or many and varied cells.
	06.SC.LS.LS1-2 Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function. Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, specifically the nucleus, chloroplasts, mitochondria, cell membrane, and cell wall. *Assessment of organelle structure/function relationships is limited to the cell wall and cell membrane. Assessment of the function of the other organelles is limited to their relationship to the whole cell. Assessment does not include the biochemical function of cells or cell parts.*
	06.SC.LS.CL3 Demonstrate an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy
	06.SC.LS.LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems. *Assessment does not include the mechanism of one body system independent of others. Assessment is limited to the circulatory, excretory, digestive, respiratory, muscular, and nervous systems.*
	06.SC.LS.LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. Emphasis is on comparing anatomical differences, such as field experiences using dichotomous and other types of keys, in order to explain evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.
06.SC.ED	**Engineering Design**
	06.SC.ED.ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
	06.SC.ED.ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

	06.SC.ED.ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
	06.SC.ED.ETS1-4 Develop a model to generate data for repetitive testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

LEVEL 7

SC Strand	Standard SCIENCE LEVEL 7
Core Resources: NextGen Science Standards; Savvas textbook; Elevate Science kits	
07.SC.LS	**Life Sciences**
	07.SC.LS.LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. Emphasis is on developing evidence that living things are made of cells, distinguishing between living and non- living things, and understanding that living things may be made of one cell or many and varied cells.
	07.SC.LS.LS1-2 Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function. Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, specifically the nucleus, chloroplasts, mitochondria, cell membrane, and cell wall. *Assessment of organelle structure/function relationships is limited to the cell wall and cell membrane. Assessment of the function of the other organelles is limited to their relationship to the whole cell. Assessment does not include the biochemical function of cells or cell parts*.
	07.SC.LS.LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems. *Assessment does not include the mechanism of one body system independent of others. Assessment is limited to the circulatory, excretory, digestive, respiratory, muscular, and nervous systems.*
	07.SC.LS.LS1-8 Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. *Assessment does not include mechanisms for the transmission of this information.*
	07.SC.LS.LS1-6 Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. Emphasis is on tracing the role of vegetation in movement of matter and flow of energy. Alaskan examples include: caribou eating lichen through the winter, forests and other ecosystems thriving with contribution of decaying salmon, and phytoplankton and seaweed in marine food chain. *Assessment does not include the biochemical mechanisms of photosynthesis*.
	07.SC.LS.LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. Emphasis is on describing that molecules are broken apart and put back together and that in this process, energy is released. *Assessment does not include details of the chemical reactions for photosynthesis or respiration*.
	07.SC.LS.LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources. This emphasis should include local ecosystem processes and traditional native ways of knowing.
	07.SC.LS.LS2-3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

	Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system. Examples should include: food web, energy pyramid, cycles of water, oxygen, nitrogen, and carbon. Alaska references could include animal droppings contributing nutrients to tundra and other ecosystems. *Assessment does not include the use of chemical reactions to describe the processes*.
	07.SC.LS.LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. Emphasis is on recognizing patterns in data, evaluating the validity of and analyzing the evidence, and making logical inferences that explain or predict changes in population based on physical or biological changes.
	07.SC.LS.LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.
	07.SC.LS.LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.* Examples of ecosystem services could include water purification, nutrient recycling, and prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and social considerations.
	07.SC.LS.LS1-4 Use an evidence-based argument to support an explanation for how characteristic behaviors and/or structures of organisms affect the probability of their successful reproduction. Examples of behaviors that affect the probability of animal reproduction could include nest building and burrowing to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring pollen or seeds, and creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract pollinators, and hard shells on nuts that squirrels bury.
	07.SC.LS.LS1-5 Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. Examples of local environmental conditions could include availability of food, light, space, and water. Examples of genetic factors could include large breed cattle and species of grass affecting growth of organisms. Examples of evidence could include drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing at different rates in different conditions, and fish growing larger in large ponds than they do in small ponds. Alaskan examples include fish sizes/population in fresh vs. salt water or of varying water temperatures, deer size and color (Sitka blacktail deer), bear size and color. *Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.*
	07.SC.LS.LS3-2 Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.

	07.SC.LS.LS4-4 Construct and present an evidence-based explanation of how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. Emphasis is on using simple probability statements and proportional reasoning to construct explanations.
	07.SC.LS.LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. Emphasis is on using mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to populations over time. *Assessment does not include Hardy Weinberg calculations*.
07.SC.ESS	**Earth and Space Sciences**
	07.SC.ES.ESS3-1 Construct an evidence-based explanation for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. Emphasis is on how these resources are limited and typically non- renewable, and how their distributions are significantly changing as a result of removal by humans. Examples of uneven distributions of resources as a result of past processes include but are not limited to petroleum (locations of the burial of organic marine sediments and subsequent geologic traps), metal ores (locations of past volcanic and hydrothermal activity associated with subduction zones), and soil (locations of active weathering and/or deposition of rock).
	07.SC.ESS.ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.* Examples of the design process include examining human environmental impacts, assessing the kinds of solutions that are feasible, and designing and evaluating solutions that could reduce that impact. Examples of human impacts can include water usage (such as the withdrawal of water from streams and aquifers or the construction of dams and levees), land usage (such as urban development, agriculture, or the removal of wetlands), and pollution (such as of the air, water, or land).
	07.LS.ESS.ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. Examples of evidence include grade-appropriate databases on human populations and the rates of consumption of food and natural resources (such as freshwater, mineral, and energy). Examples of impacts can include changes to the appearance, composition, and structure of Earth's systems as well as the rates at which they change. The consequences of increases in human populations and consumption of natural resources are described by science, but science does not make the decisions for the actions society takes.
07.SC.PS	**Physical Sciences**
	07.SC.PS.PS2-3 Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. Examples of devices that use electric and magnetic forces could include electromagnets, electric motors, or generators. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, the effect of increasing the number or strength of magnets on the speed of an electric motor, or a change in the range and intensity of the aurora over time. *Assessment about questions that require quantitative answers is limited to proportional reasoning and algebraic thinking*.
	07.SC.PS.PS2-5 Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

	Examples of this phenomenon could include the interactions of magnets, electrically-charged strips of tape, and electrically-charged pith balls. Examples of investigations could include first-hand experiences or simulations. *Assessment is limited to electric and magnetic fields, and limited to qualitative evidence for the existence of fields.*
	07.SC.PS.PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. Emphasis is on descriptive relationships between kinetic energy and mass separately from kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different sizes of rocks downhill, and getting hit by a wiffle ball versus a tennis ball.
	07.SC.PS.PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. Emphasis is on relative amounts of potential energy, not on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, and written descriptions of systems. *Assessment is limited to two objects and electric, magnetic, and gravitational interactions.*
	07.SC.PS.PS4-1 Qualitatively and quantitatively describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. Examples can include waves modeled with a jump rope, slinky, water, seismic activity, and sound. *Assessment does not include electromagnetic waves and is limited to standard repeating waves*.
	07.SC.PS.PS4-2 Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. Emphasis is on both light and mechanical waves (including sound). Examples of models could include drawings, simulations, and written descriptions. Alaskan examples include whale echolocation, or use of sonar projection of the sea floor and fish populations. *Assessment is limited to qualitative applications pertaining to light and mechanical waves.*
	07.SC.PS4-2 Integrated with HS PS4-2
07.SC.ED	**Engineering Design**
	07.SC.ED.ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
	07.SC.ED.ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
	07.SC.ED.ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
	07.SC.ED.ETS1-4 Develop a model to generate data for repetitive testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

LEVEL 8

SC Strand	Standard	SCIENCE LEVEL 8
Core Resources: Glencoe Integrated Science, Blue Level; SC Curriculum Guide Levels 6-8		
08.SC.PS	**Physical Sciences**	
	08.SC.PS.PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures. Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures, or computer representations showing different molecules with different types of atoms. *Assessment does not include valence electrons and bonding energy, discussing the ionic nature of subunits of complex structures, or a complete description of all individual atoms in a complex molecule or extended structure is not required.*	
	08.SC.PS.PS1-2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogen chloride. *Assessment is limited to analysis of the following properties: density, melting point, boiling point, solubility, flammability, and odor*.	
	08.SC.PS.PS1-3 Collect information that supports the idea that synthetic materials come from the use of natural resources, and analyze the positive and negative effects of use and development of synthetics on society. Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels. *Assessment is limited to qualitative information*.	
	08.SC.PS.PS1-5 Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. Emphasis is on law of conservation of matter and on physical models or drawings, including digital forms that represent atoms. *Assessment does not include the use of atomic masses, balancing symbolic equations, or intermolecular forces*.	
	08.SC.PS.PS1-6 Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. * Emphasis is on the design, controlling the transfer of energy to the environment, and modification of a device using factors such as type and concentration of a substance. Examples of chemical process designs could involve dissolving ammonium chloride or calcium chloride and chemical heat packs. Examples of physical process designs could involve a plastic bag and hot water. Alaskan physical examples could include: countercurrent exchange in the limbs and surfaces of Arctic animals and the DIFFERENCE IN THE albedo effect of open ocean water vs. sea ice. *Assessment is limited to the criteria of amount, time, and temperature of substance in testing the device*.	
	08.SC.PS.PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.* Examples of practical problems could include the impact of collisions between two cars, between a car and stationary objects, and between a meteor and a space vehicle. *Assessment is limited to vertical or horizontal interactions in one dimension*.	
	08.SC.PS.PS2-2 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.	

	Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units. *Assessment is limited to forces and changes in motion in one-dimension in an inertial reference frame and to change in one variable at a time. Assessment does not include the use of trigonometry.*
	08.SC.PS.PS2-4 Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. Examples of evidence for arguments could include data generated from simulations or digital tools; and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system. *Assessment does not include Newton's Law of Gravitation or Kepler's Laws*.
	08.SC.PS.PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. Emphasis is on relative amounts of potential energy, not on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, and written descriptions of systems. *Assessment is limited to two objects and electric, magnetic, and gravitational interactions.*
08.SC.LS	**Life Sciences**
	08.SC.LS.LS3-1 Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. Emphasis is on conceptual understanding that changes in genetic material may result in making different proteins and that the changes can have far- reaching effects. *Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations*.
	08.SC.LS.LS3-2 Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.
	08.SC.LS.LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. Emphasis is on finding patterns of changes in the level of complexity of anatomical structures in organisms and the chronological order of fossil appearance in the rock layers. *Assessment does not include the names of individual species or geological eras in the fossil record*.
	08.SC.LS.LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. Emphasis is on comparing anatomical differences, such as field experiences using dichotomous and other types of keys, in order to explain evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.

	08.SC.LS.LS4-3 Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. Emphasis is on inferring general patterns of relatedness among embryos of different organisms by comparing the macroscopic appearance of diagrams or pictures. *Assessment of comparisons is limited to gross appearance of anatomical structures in embryological development*.
	08.SC.LS.LS4-4 Construct and present an evidence-based explanation of how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. Emphasis is on using simple probability statements and proportional reasoning to construct explanations.
	08.SC.LS.LS4-5 Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms. Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy); and, on the impacts these technologies have on society as well as the technologies leading to these scientific discoveries.
	08.SC.LS.LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. Emphasis is on using mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to populations over time. *Assessment does not include Hardy Weinberg calculations*.
08.SC.ESS	**Earth and Space Sciences**
	08.SC.ESS.ESS1-1 Develop and use a model to explain how the positions of the Earth-Sun-Moon in a system and the cyclic patterns of each cause lunar phases and eclipses of the sun and moon. Including developing and using a model to explain how the seasons occur. Examples of models can be physical, graphical, or conceptual. Reference Alaskan community latitudes and how position on the Earth affects the severity of the seasons for the different regions of AK. Compare and describe the seasons of the northern hemisphere and the southern hemisphere. *Assessment limited to qualitative and spatial explanations for seasons*.
	08.SC.ESS.ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical (such as the analogy of distance along a football field or computer visualizations of elliptical orbits) or conceptual (such as mathematical proportions relative to the size of familiar objects such as students' school or state.) *Assessment does not include Kepler's Laws of orbital motion or the apparent retrograde motion of the planets as viewed from Earth*.
	08.SC.ESS.ESS1-3 Analyze data to determine scale properties of objects in the solar system. Emphasis is on the analysis of data from Earth-based instruments, space-based telescopes, and spacecraft to determine similarities and differences among solar system objects. Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models. *Assessment does not include recalling facts about properties of the planets and other solar system bodies*.
	08.SC.ESS.ESS1-4 Construct and explain, using evidence from rock strata, how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

	Emphasis is on how analyses of rock formations and the fossils they contain are used to establish relative ages of major events in Earth's history. Examples of Earth's major events could range from being very recent (such as the last Ice Age or the earliest fossils of homo sapiens) to very old (such as the formation of Earth or the earliest evidence of life). Examples can include the formation of mountain chains and ocean basins, the evolution or extinction of particular living organisms, or significant volcanic eruptions. *Assessment does not include recalling the names of specific periods or epochs and events within them*.
	08.SC.ESS.ESS2-6 Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations. *Assessment does not include the dynamics of the Coriolis effect*.
	08.SC.ESS.ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. Examples of factors include human activities (such as fossil fuel combustion, cement production, and agricultural activity) and natural processes (such as changes in incoming solar radiation or volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures and chemistry (both ocean and land surface), sea ice cover, permafrost, glacial change, atmospheric levels of gases such as carbon dioxide and methane, food availability locally and worldwide, and the rates of human activities. Emphasis is on the major role that human activities play in causing the rise in global temperatures.
08.SC.ED	**Engineering Design**
	08.SC.ED.ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
	08.SC.ED.ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
	08.SC.ED.ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
	08.SC.ED.ETS1-4 Develop a model to generate data for repetitive testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

LEVEL 9

SC Strand	Standard SCIENCE LEVEL 9: BIOLOGY
Core Resources: NextGen Science Standards; Biozone textbook	
09.SC.SF	**Structure and Function**
	09.SC.SF.LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells. *Assessment does not include identification of specific cell or tissue types, whole body systems, specific protein structures and functions, or the biochemistry of protein synthesis.*
	09.SC.SF.LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. Emphasis is on functions at the organism system level such as nutrient uptake, water delivery, and organism movement in response to neural stimuli. An example of an interacting system could be an artery depending on the proper function of elastic tissue and smooth muscle to regulate and deliver the proper amount of blood within the circulatory system. *Assessment does not include interactions and functions at the molecular or chemical reaction level.*
	09.SC.SF.LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. Examples of investigations could include heart rate response to exercise, stomate response to moisture and temperature, and root development in response to water levels. *Assessment does not include the cellular processes involved in the feedback mechanism*.
09.SC.MEOE	**Matter and Energy in Organisms and Ecosystems**
	09.SC.MEOE.LS1-5 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. Emphasis is on illustrating inputs and outputs of matter and the transfer and transformation of energy in photosynthesis by plants and other photosynthesizing organisms. Examples of models could include diagrams, chemical equations, and conceptual models. *Assessment does not include specific biochemical steps*.
	09.SC.MEOE.LS1-6 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules. Emphasis is on using evidence from models and simulations to support explanations. *Assessment does not include the details of the specific chemical reactions or identification of macromolecules*.
	09.SC.MEOE.LS1-7 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy. Emphasis is on the conceptual understanding of the inputs and outputs of the process of cellular respiration. *Assessment should not include identification of the steps or specific processes involved in cellular respiration*.
	09.SC.MEOE.LS2-3 Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. Emphasis is on conceptual understanding of the role of aerobic and anaerobic respiration in different environments. *Assessment does not include the specific chemical processes of either aerobic or anaerobic respiration.*

	09.SC.MEOE.LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. Emphasis is on using a mathematical model of stored energy in biomass to describe the transfer of energy from one trophic level to another and that matter and energy are conserved as matter cycles and energy flows through ecosystems. Emphasis is on atoms and molecules such as carbon, oxygen, hydrogen and nitrogen being conserved as they move through an ecosystem. *Assessment is limited to proportional reasoning to describe the cycling of matter and flow of energy.*
	09.SC.MEOE.LS2-5 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. Examples of models could include simulations and mathematical models. *Assessment does not include the specific chemical steps of photosynthesis and respiration*.
09.SC.IRE	**09.SC.IRE.LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.** Emphasis is on quantitative analysis and comparison of the relationships among interdependent factors including boundaries, resources, climate, and competition. Examples of mathematical comparisons could include graphs, charts, histograms, and population changes gathered from simulations or historical data sets. *Assessment does not include deriving mathematical equations to make comparisons*.
	09.SC.IRE.LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. Examples of mathematical representations include finding the average, determining trends, and using graphical comparisons of multiple sets of data. *Assessment is limited to provided data*.
	09.SC.IRE.LS2-6 Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. Examples of changes in ecosystem conditions could include hunting and fishing harvests, predation, flooding, sea ice variation, erosion, volcanic eruptions, land level changes due to earthquakes, tsunamis, changes in ocean current patterns or ocean chemistry, or sea-level rise.
	09.SC.IRE.LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.* Examples of human activities can include urbanization, pollution, building dams and roads, and dissemination of invasive species. Example lessons can include applications of Tragedy of the Commons.
	09.SC.IRE.LS2-8 Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce. Emphasis is on: (1) distinguishing between group and individual behavior, (2) identifying evidence supporting the outcomes of group behavior, and (3) developing logical and reasonable arguments based on evidence. Examples of group behaviors could include flocking, schooling, herding, and cooperative behaviors such as hunting, migrating, and swarming.
	09.SC.IRE.LS4-6 Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.*

	Emphasis is on testing solutions for a proposed problem related to threatened or endangered species, or to genetic variation of organisms for multiple species.
09.SC.IVT	**Inheritance and Variation of Traits**
	09.SC.IVT.LS1-4 Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. *Assessment does not include specific gene control mechanisms or rote memorization of the steps of mitosis.*
	09.SC.IVT.LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. *Assessment does not include the phases of meiosis or the biochemical mechanism of specific steps in the process.*
	09.SC.IVT.LS3-2 Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors. Emphasis is on using data to support arhuments for the way variation occurs. *Assessment does not include the phases of meiosis or the biochemical mechanism of specific steps in the process.*
	09.SC.IVT.LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. Emphasis is on the use of mathematics to describe the probability of traits as it relates to genetic and environmental factors in the expression of traits. *Assessment does not include Hardy-Weinberg calculations.*
09.SC.NSE	**Natural Selection and Evolution**
	09.SC.NSE.LS4-1 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence. Emphasis is on a conceptual understanding of the role each line of evidence has relating to common ancestry and biological evolution. Examples of evidence could include similarities in DNA sequences, anatomical structures, and order of appearance of structures in embryological development.
	09.SC.NSE.LS4-2 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment. Emphasis is on using evidence to explain the influence each of the four factors has on any number of organisms, behaviors, morphology, or physiology in terms of ability to compete for limited resources and subsequent survival of individuals and adaptation of species. Examples of evidence could include mathematical models such as simple distribution graphs and proportional reasoning. *Assessment does not include other mechanisms of evolution, such as genetic drift, gene flow through migration, and co-evolution*.
	09.SC.NSE.LS4-3 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait. Emphasis is on analyzing shifts in numerical distribution of traits and using these shifts as evidence to support explanations. *Assessment is limited to basic statistical and graphical analysis. Assessment does not include allele frequency calculations*.

	09.SC.NSE.LS4-4 Construct an explanation based on evidence for how natural selection leads to adaptation of populations. Emphasis is on using data to provide evidence for how specific biotic and abiotic differences in ecosystems (such as ranges of seasonal temperature, long-term climate change, acidity, light, geographic barriers, or evolution of other organisms) contribute to a change in gene frequency over time, leading to adaptation of populations.
	09.SC.NSE.LS4-5 Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species. Emphasis is on determining cause and effect relationships for how changes to the environment such as deforestation, fishing, pollution, erosion, permafrost thawing, changes in sea ice, invasive species, land level changes due to earthquakes, changes in ocean chemistry, sea level change, volcanic eruptions, drought, flood and the rate of change of the environment affect the distribution or disappearance of traits in species.
09.SC.ED	**Engineering Design**
	09.SC.ED.ETS1-1 Analyze major global challenges to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
	09.SC.ED.ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
	09.SC.ED.ETS1-3 **Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.**
	09.SC.ED.ETS.1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

LEVEL 10

SC Strand	Standard	SCIENCE LEVEL 10: PHYSICAL SCIENCES
Core Resources: NextGen Science Standards; Biozone textbook		
10.SC.SPM	**Structure and Properties of Matter**	
	10.SC.SPM.PS1-1 Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms (valence electrons). Examples of properties that could be predicted from patterns could include reactivity of metals, types of bonds formed, numbers of bonds formed, and reactions with oxygen. *Assessment is limited to main group elements. Assessment does not include quantitative understanding of ionization energy beyond relative trends*.	
	10.SC.SPM.PS1-3 Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. Emphasis is on understanding the strengths of forces between particles, not on naming specific intermolecular forces (such as dipole-dipole). Examples of particles could include ions, atoms, molecules, and networked materials (such as graphite). Examples of bulk properties of substances could include the melting point and boiling point, vapor pressure, and surface tension. *Assessment does not include Raoult's law calculations of vapor pressure.*	
	10.SC.SPM.PS1-8 Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay. Emphasis is on simple qualitative models, such as pictures or diagrams, and on the scale of energy released in nuclear processes relative to other kinds of transformations. Example applications include dating of rocks, carbon dating of artifacts, paleoclimate studies, medical imaging, tracking animal migrations via diet, age dating meteorites, tracking ground water flow. *Assessment does not include quantitative calculation of energy released. Assessment is limited to alpha, beta, and gamma radioactive decays*.	
10.SC.CR	**Chemical Reactions**	
	10.SC.CR.PS1-2 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. Examples of chemical reactions could include the reaction of sodium and chlorine, of carbon and oxygen, or of carbon and hydrogen.] [*Assessment Boundary: Assessment is limited to chemical reactions involving main group elements and combustion reactions.*	
	10.SC.CR.PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. Emphasis is on using mathematical ideas to communicate the proportional relationships between masses of atoms in the reactants and the products, and the translation of these relationships to the macroscopic scale using the mole as the conversion from the atomic to the macroscopic scale. Emphasis is on assessing students' use of mathematical thinking and not on memorization and rote application of problem-solving techniques. *Assessment does not include complex chemical reactions*.	
10.SC.FI	**Forces and Interactions**	

	10.SC.FI.PS2-1 Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. Examples of data could include tables or graphs of position or velocity as a function of time for objects subject to a net unbalanced force, such as a falling object, an object sliding down a ramp, or a moving object being pulled by a constant force. *Assessment is limited to one-dimensional motion and to macroscopic objects moving at non-relativistic speeds*.
	10.SC.FI.PS2-2 Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. Emphasis is on the quantitative conservation of momentum in interactions and the qualitative meaning of this principle. *Assessment is limited to systems of two macroscopic bodies moving in one dimension*.
	10.SC.FI.PS2-3 Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.* Examples of evaluation and refinement could include determining the success of the device at protecting an object from damage and modifying the design to improve it. Examples of a device could include a football helmet or a parachute. *Assessment is limited to qualitative evaluations and/or algebraic manipulations*.
	10.SC.FI.PS2-4 Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects. Emphasis is on both quantitative and conceptual descriptions of gravitational and electric fields. *Assessment is limited to systems with two objects*.
10.SC.ENE	**Energy**
	10.SC.ENE.PS3-1 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. Emphasis is on explaining the meaning of mathematical expressions used in the model. Examples of models could include different insulation types or windows. *Assessment is limited to basic algebraic expressions or computations; to systems of two or three components; and to thermal energy, kinetic energy, and/or the energies in gravitational, magnetic, or electric fields*.
	10.SC.ENE.PS3-2 Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects). Examples of phenomena at the macroscopic scale could include the conversion of kinetic energy to thermal energy, the energy stored due to position of an object above the earth, and the energy stored between two electrically-charged plates. Examples of models could include diagrams, drawings, descriptions, and computer simulations.
	10.SC.ENE.PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. Emphasis is on both qualitative and quantitative evaluations of devices. Examples of devices could include Rube Goldberg devices, wind turbines, solar cells, solar ovens, and generators. Examples of constraints could include use of renewable energy forms and efficiency. *Assessment for quantitative evaluations is limited to total output for a given input. Assessment is limited to devices constructed with materials provided to students*.
	10.SC.ENE.PS3-4 Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a

	closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics). Emphasis is on analyzing data from student investigations and using mathematical thinking to describe the energy changes both quantitatively and conceptually. Examples of investigations could include mixing liquids at different initial temperatures or adding objects at different temperatures to water. *Assessment is limited to investigations based on materials and tools provided to students*.
10.SC.WER	**Waves and Electromagnetic Radiation**
	10.SC.WER.PS4-1 Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. Examples of data could include electromagnetic radiation traveling in a vacuum and glass, sound waves traveling through air and water, and seismic waves traveling through the Earth. *Assessment is limited to algebraic relationships and describing those relationships qualitatively*.
10.SC.ED	**Engineering Design**
	10.SC.ED.ETS1-1 Analyze major global challenges to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
	10.SC.ED.ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
	10.SC.ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
	10.SC.ETS.1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

LEVEL 11

SC Strand	Standard	SCIENCE LEVEL 11: EARTH AND SPACE SCIENCES
Core Resources: NextGen Science Standards; Biozone textboook		
11.SC.SS	**Space Systems**	
	11.SC.SS.ESS1-1 Develop a model based on evidence to illustrate that the life span of the Sun is a function of nuclear fusion in its core, and that stars, through nuclear fusion over their life cycle, produce elements and release energy that eventually reaches Earth in the form of radiation. Emphasis is on the way nucleosynthesis, and therefore the different elements created, varies as a function of the mass of a star and the stage of its lifetime. Emphasis is on the energy transfer mechanisms that allow energy from nuclear fusion in the sun's core to reach Earth. Example applications include solar flares, auroras, the 11-year sunspot cycle and non-cyclic variations over centuries. *Assessment does not include details of the atomic and sub-atomic processes involved with nuclear fusion, or details of the many different nucleosynthesis pathways for stars of differing masses*.
	11.SC.SS.ESS1-2 Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe. Emphasis is on the astronomical evidence of the red shift of light from galaxies as an indication that the universe is currently expanding, the cosmic microwave background as the remnant radiation from the Big Bang, and the observed composition of ordinary matter of the universe, primarily found in stars and interstellar gases (from the spectra of electromagnetic radiation from stars), which matches that predicted by the Big Bang theory (3/4 hydrogen and 1/4 helium).
	11.SC.SS.ESS1-4 Use mathematical or computational representations to predict the motion of orbiting objects in the solar system. Emphasis is on Newtonian gravitational laws governing orbital motions, which apply to human-made satellites as well as planets and moons. *Mathematical representations for the gravitational attraction of bodies and Kepler's Laws of orbital motions should not deal with more than two bodies, nor involve calculus*.
11.SC.HE	**History of Earth**	
	11.SC.HE.ESS1-5 Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics and "and thermal convention" to explain the ages of crustal rocks. Emphasis is on the ability of plate tectonics to explain the ages of crustal rocks. Examples include evidence of the ages oceanic crust increasing with distance from mid-ocean ridges (a result of plate spreading) and the ages of North American continental crust decreasing with distance away from a central ancient core of the continental plate (a result of past plate interactions).
	11.SC.HE.ESS2-1 Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features. Emphasis is on how the appearance of land features (such as mountains, valleys, and plateaus) and sea-floor features (such as trenches, ridges, and seamounts) are a result of both constructive forces (such as volcanism, tectonic uplift, and orogeny) and destructive mechanisms (such as weathering, mass wasting, and coastal erosion). *Assessment does not*

	include memorization of the details of the formation of specific geographic features of Earth's surface.
11.SC.ES	**Earth's Systems**
	11.SC.ES.ESS2-2 Analyze geoscience data to evaluate claims that one change to Earth's surface creates feedbacks that cause changes to other Earth systems. Examples should include climate feedbacks, such as how an increase in greenhouse gases causes a rise in global temperature that melts glacial and sea ice, which reduces the amount of sunlight reflected from Earth's surface, increasing surface temperatures and further reducing the amount of ice. Examples could also be taken from other system interactions, such as feedbacks due to the effects of permafrost thawing; how the loss of ground vegetation causes an increase in water runoff and soil erosion; how dammed rivers increase groundwater recharge and decrease sediment transport, and how the loss of wetlands causes a decrease in local humidity that further reduces wetland extent.
	11.SC.ES.ESS2-5 Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes. Emphasis is on mechanical and chemical investigations with water and a variety of solid materials to provide evidence for the connections between the hydrologic cycle and system interactions commonly known as the rock cycle. Examples of mechanical investigations include stream transportation and deposition using a stream table, beach erosion and deposition patterns in relation to substrate type and size, erosion using variations in soil moisture content, and frost wedging by the expansion of water as it freezes. Examples of chemical investigations include chemical weathering, and recrystallization (by testing the solubility of different materials) or melt generation (by examining how water lowers the melting temperature of most solids).
	11.SC.ES.ESS2-6 Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere. Emphasis is on modeling biogeochemical cycles that include the cycling of carbon through the ocean, atmosphere, soil, permafrost, and biosphere (including humans), providing the foundation for living organisms.
	11.SC.ES.ESS2-7 Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth. Emphasis is on the dynamic causes, effects, and feedbacks between the biosphere and Earth's other systems, whereby geoscience factors control the evolution of life, which in turn continuously alters Earth's surface. Examples include how photosynthetic life altered the atmosphere through the production of oxygen, which in turn increased weathering rates and allowed for the evolution of animal life; how microbial life on land increased the formation of soil, which in turn allowed for the evolution of land plants; or how the evolution of corals created reefs that altered patterns of erosion and deposition along coastlines and provided habitats for the evolution of new life forms. *Assessment does not include a comprehensive understanding of the mechanisms of how the biosphere interacts with all of Earth's other systems*.
11.SC.WC	**Weather and Climate**
	11.SC.WC.ESS2-4 Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate. Examples of the causes of climate change differ by timescale, over 1-10 years: large volcanic eruption, ocean circulation; 10-100s of years: changes in human activity, ocean circulation, solar output; 10-100s of thousands of years: changes to Earth's orbit and the orientation of its

	axis; and 10-100s of millions of years: long-term changes in atmospheric composition. *Assessment of the results of changes in climate is limited to changes in surface temperatures, precipitation patterns, glacial ice volumes, sea levels, and biosphere distribution*.
	11.SC.WC.ESS3-5 Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems. Examples of evidence, for both data and climate model outputs, are for climate changes (such as precipitation and temperature) and their associated impacts (such as on sea level, glacial ice volumes, and physical and chemical characteristics of atmosphere and ocean. *Assessment is limited to one example of a climate change and its associated impacts*.
11.SC.HS	**Human Sustainability**
	11.SC.HS.ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. Examples of key natural resources include access to fresh water (such as rivers, lakes and groundwater), regions of fertile soils such as river deltas, and high concentrations of minerals, wildlife, fish, trees, and fossil fuels. Examples of natural hazards can be from interior processes (such as volcanic eruptions and earthquakes), surface processes (such as tsunamis, mass wasting, and soil erosion), and severe weather (such as hurricanes, floods, storm surge, lightning strike fires, and droughts). Examples of the results of changes in climate that can affect populations or drive mass migrations include changes to sea level, regional patterns of temperature and precipitation, changes in stream or ocean water temperatures and/or chemistry, and the types of food that can be raised, hunted, fished, harvested, or gathered. If appropriate incorporate local, place-based learning.
	11.SC.HS.ESS3-2 Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios. Emphasis is on the conservation, recycling and reuse of resources (such as minerals and metals) where possible and on minimizing impacts where it is not. Examples include developing best practices for agricultural soil use, all types of mining, extracting of fossil fuels, and collecting renewable resources. Scientific knowledge indicates what can happen in natural systems--not what should happen. If appropriate, incorporate local, place-based learning.
	11.SC.HS.ESS3-3 Investigate a local relationships among the management of natural resources, the sustainability of human populations, and biodiversity. Examples of factors that affect the management of natural resources include costs of resource extraction and waste management, per-capita consumption, and the development of new technologies. Examples of factors that affect human sustainability include agricultural efficiency, levels of conservation, and urban planning. *Assessment for computational simulations is limited to using provided multi-parameter programs or constructing simplified spreadsheet calculations*. If appropriate, incorporate local, place-based learning.
	11.SC.HS.ESS3-4 Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.* Examples of data on the impacts of human activities could include the quantities and types of pollutants released, changes to biomass and species diversity, or areal changes in land surface use (such as for urban development, agriculture and livestock, or surface mining). Examples for limiting future impacts could range from local efforts (such as reducing, reusing, and recycling resources) to large-scale geoengineering design solutions (such as altering global temperatures by making large changes to the atmosphere or ocean).

	11.SC.HS.ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. Examples of Earth systems to be considered are the hydrosphere, atmosphere, cryosphere, geosphere, and/or biosphere. An example of the far-reaching impacts from a human activity is how an increase in atmospheric carbon dioxide results in an increase in photosynthetic biomass on land and an increase in ocean acidification, with resulting impacts on sea organism health and marine populations. *Assessment does not include running computational representations but is limited to using the published results of scientific computational models*.
11.SC.ED	**Engineering Design**
	11.SC.ED.ETS1-1 Analyze major global challenges to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
	11.SC.ED.ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
	11.SC.ED.ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
	11.SC.ED.ETS.1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

LPSD NEW TECHNOLOGY STANDARDS

During the 2023-2024 school year, the technology standards were updated. These updates aim to refine the current standards to be more aligned with the evolving digital landscape, ensuring that students are not only consumers but also creators and ethical users of technology. They also aim to enhance digital wellness and prepare students for the realities of a digital economy, emphasizing skills that will be relevant in their future careers.

Technology Level 4	
04.TE.01	Creates multimedia presentations with multiple pages and transitions for individual assignments.
04.TE.02	Predicts which information sources will provide the desired data or information.
04.TE.03	Identify and understand what they can or can not do within the Lake and Peninsula Acceptable Usage.
04.TE.04	Recognize and describe the potential risks and dangers associated with various forms of online communication.
04.TE.05	Identify and discuss the effects of cyberbullying.
04.TE.06	Performs keyboarding skills to 15 wpm using proper technique at 80% minimum accuracy.
04.TE.07	With guidance, participates in 4th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).

Technology Level 5	
05.TE.01	Creates a cooperative multimedia project to clarify and present information.
05.TE.02	Reports on safe online communication practices regarding personal information.
05.TE.03	Explains copyright rules (laws) about using digital text.
05.TE.04	Describe cyberbullying, effects of cyberbullying, and how to respond to cyberbullying.
05.TE.05	Performs keyboarding skills to 20 wpm using proper technique at 80% minimum accuracy.
05.TE.06	Determines when it is appropriate and safe to use various personal devices at school.
05.TE.07	Knows terms associated with the Internet (URL, http/https, file extensions (mp3, mp4, mov), bookmarks, browser, etc.).
05.TE.08	With guidance, participates in 5th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).

Technology Level 6

06.TE.01	Evaluate between fact, opinion, bias, inaccurate, and misleading information by consulting more than one source when using digital tools and the internet for research.
06.TE.02	Explains copyright rules (laws) about using video, audio, and/other digital sources in projects and assignments.
06.TE.03	Exhibits legal and ethical behavior when using technology.
06.TE.04	Performs keyboarding skills to 25 wpm using proper technique at 80% minimum accuracy.
06.TE.05	Students are introduced to best practices (specific keywords, quotation marks, the use of and/or, ect) in the use of search engine algorithms and AI and how they affect the information that is presented.
06.TE.06	Students actively uses shortcut keys and trackpad features used in creating documents and navigating the computer (ie. ⌘C to copy text).
06.TE.07	Can identify and explain the internal and physical components of a computer (motherboard, ram, hard drive, drives, CPU, interfaces, keyboards, touchscreens, etc.).
06.TE.08	Can analyze common computer problems, and explain solutions to problems as they arise (common display issues, force quit, control alt delete, google for help to fix things, etc.).
06.TE.09	Can use basic formatting tools in word processing, spreadsheet (including formulas), and multimedia software (ie. bold or underline text, adjust column size, or move pictures).
06.TE.10	With guidance, participates in 6th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).

Technology Level 7	
07.TE.01	Create a self-directed, innovative movie, audio recording, or other multimedia project using digital tools to express original ideas or to teach someone how to do something (EG: science and social studies topics).
07.TE.02	Perform keyboarding skills to 30 wpm using proper technique at 80% minimum accuracy.
07.TE.03	Create and manipulate graphs and charts, and perform multi-step calculations using spreadsheet data.
07.TE.04	Explain the basic principles of Local Area Networks (LAN/Ethernet), Wide Area Networks (WAN/Wi-Fi), and the World Wide Web (www/Internet).
07.TE.05	Use an online tutorial and discuss the benefits and disadvantages of using this method of learning.
07.TE.06	Identify the relationship between a computer's specifications and how they affect computer performance (e.g., RAM, Memory, Processor Speed).
07.TE.07	Explain the responsibilities of cyber citizens.
07.TE.08	With guidance, participates in 7th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).
07.TE.09	Complete 3 or more age appropriate digital health and/or wellness lessons (i.e. commonsensemedia.org, missingkids.org/netsmartz).

Technology Level 8 = .50 High School Credit	
08.TE.01	Explain the various digital media copyright policies and apply them in a variety of situations (Fair Use, PDL).
08.TE.02	Perform keyboarding skills to 35 wpm using proper technique at 80% minimum accuracy.
08.TE.03	Uses advanced spreadsheet skills including basic data visualization techniques (EG: pivot tables, and integrate into math and science lessons).
08.TE.04	Communicate and publish ways to stay safe and be responsible on the internet, in regards to one's personal information, viruses, privacy settings, digital footprint, and password settings.
08.TE.05	Create a form of digital media (movie, audio recording, etc.).
08.TE.06	Evaluate the advantages and disadvantages of using different digital mediums (ie: Virtual Reality, Augmented Reality, Extended Reality, Multi Point Screens).
08.TE.07	Evaluate how technology can be used to distort, exaggerate, and misrepresent information.
08.TE.08	Describe and use safe, appropriate, and responsible practices (netiquette) when participating in online communities (e.g., discussion groups, blogs, social networking sites).
08.TE.09	With guidance, participates in 8th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).
08.TE.10	Complete 3 or more age appropriate digital health and/or wellness lessons (i.e. commonsensemedia.org, missingkids.org/netsmartz).

Technology Level 9= 1.0 HS Credit	
09.TE.01	Proficiently create and update an online portfolio/website to store and display work, to interact with others, to get feedback, and to publish to the "real world" (EG: Google Sites, Word Press).
09.TE.02	Evaluate physical and digital procedures that could be implemented to protect electronic data/information. Explain the impacts of malware (e.g., phishing, hacking, ransomware).
09.TE.03	Discuss the social impacts and ethical considerations associated with cybersecurity, including the positive and malicious purposes of hacking.
09.TE.04	Compare and contrast human intelligence and computer intelligence (e.g., emotional decision making versus logical decisions; common sense; literal versus abstract).
09.TE.05	Evaluate and offer suggestions to improve the design of past or current technologies to meet the needs of diverse users and increase accessibility (including settings on devices) and usability.
09.TE.06	Describe the pros and cons associated with existing computing technologies, explaining their effects on economies and global societies, and explore community and global careers related to the field of computer science (e.g., automation, AI, resource consumption,ect.).
09.TE.07	Research "emerging technologies" and discuss the implications of several of these by creating a digital presentation.
09.TE.08	With guidance, participates in 9th grade level Computer Science lessons to accomplish a task or as a creative expression using a programming language, robot device or unplugged activity (i.e. code.org, scratch, ect).
09.TE.09	Complete 3 or more age-appropriate digital health and/or wellness lessons (i.e. commonsensemedia.org, missingkids.org/netsmartz).

09.TE.10	Explore different technology careers through guest speakers, virtual job shadows, or partnerships with local businesses.

Technology Level 10 = 1.0 High School Credit	
******Completes only THREE approved technology projects (students pick from the list below)******	
10.TE.01	Identify "app" development software and proficiently create an application using the software (i.e. code.org, app developer).
10.TE.02	Design and build a project in 3D modeling software (i.e. Tinker CAD, solid edge).
10.TE.03	Complete a large data collection and reporting project. This project should include, but is not limited to, using digital tools to come up with a research question, collect data, draw conclusions, and evaluate and present results (i.e. Science Fair).
10.TE.04	List and explain the criteria that describe a robot, designs and/or builds a prototype. This project should include how robots are used in a chosen job field, and report on what skills are needed in order to use robots in the given field.
10.TE.05	Complete pre-approved and new-to-the-student short-term learning paths in code.org or micro credentials (EG: cyber security, cisco systems).
10.TE.06	Using technology, create a digital health and wellness lesson to teach, and present the lesson to others.
10.TE.07	Complete a project of the student's choice upon approval of the LPSD Technology Department.
10.TE.08	Analyze and present on at least 3 different local technology careers that can be done in your community or region.

Technology Level 11 = .50 High School Credit	
11.TE.01	Completes pre approved distance technology course or certification program (i.e. semester-long age appropriate units in code.org, micro credentials, I o T [Internet of Things] ect.).

Technology Level 12 = .50 High School Credit	
12.TE.01	Completes a semester long, pre approved mentorship, apprenticeship, or internship that align with individual students interests in technology.

LPSD EMPLOYABILITY STANDARDS

EM Strand	Standard	EMPLOYABILITY LEVEL 4
Core Resources: Level 4 Wellness Plan		
04.EM	**Employability Standards**	
	01	Visits local work sites and places of business
	02	Understands some basic employability words (e.g., job, career, pay, work, reward, cooperate, share, volunteer, service, caring)
	03	Demonstrates being a responsible student by listening, cooperating, sharing, taking turns, following rules, offering help when needed, using good manners
	04	Identifies and expresses feelings appropriately
	05	Participates in group goal setting process
	06	Participates in simple service project that encourages cooperation
	07	Participates in group Wellness & Safety Plan

EM Strand	Standard	EMPLOYABILITY LEVEL 5
Core Resources: Level 5 Wellness Plan		
05.EM	**Employability Standards**	
	01	Demonstrates basic understanding of the skills needed to get and keep a job (e.g., good attendance, basic academic skills, teamwork, respect for authority and punctuality)
	02	Understands how appearance and behavior are important in a variety of situations
	03	Identifies a variety of non-local jobs
	04	Demonstrates being a responsible student by displaying honesty and respect, staying on task, using good manners (e.g., politely interrupting someone, using phone and radio etiquette and interacting appropriately with adults), cleaning up after self and being organized
	05	Participates in group and individual goal setting
	06	Participates in class service project
	07	Participates in group Wellness & Safety Plan

EM Strand	Standard	EMPLOYABILITY LEVEL 6
Core Resources: Level 6 Wellness Plan **Digital Resources:** http://akcis.intocareers.org		
06.EM	**Employability Standards**	
	01	Understands the connection between a positive attitude towards learning and being successful in life
	02	Understands how work can affect quality of life (e.g., wants vs. needs)
	03	Investigates several careers
	04	Demonstrates being a responsible student by completing tasks, being prepared to work, putting forth best effort, having pride in work, actively participating, and maintaining a positive attitude
	05	Communicates feelings in a positive and constructive manner (e.g., empathy, compassion, using "I" messages)
	06	Employs group interaction skills for dealing with peer pressure, resolving conflicts, communicating effectively and using humor responsibly

	07	Demonstrates resiliency using coping skills
	08	Practices decision making and problem solving strategies
	09	Practices goal setting process to establish short and long-term goals
	10	Completes an education map
	11	Volunteers at an event in the community
	12	Participates in group Wellness & Safety Plan

EM Strand	**Standard**	**EMPLOYABILITY LEVEL 7**
Core Resources: Level 7 Wellness Plan, Level 7 Activity and Assessment Guide **Digital Resources:** http://akcis.intocareers.org		
07.EM	**Employability Standards**	
	01	Identifies possible strengths and weaknesses of people in general
	02	Identifies personal learning styles and develops strategies for more successful learning
	03	Practices customer service skills
	04	Articulates and demonstrates why good attendance and being on-time are important
	05	Displays good manners, positive attitude and best effort in various situations
	06	Understands equality and respect for others
	07	Uses strategies to deal with shyness, embarrassment, boredom and peer pressure
	08	Employs skills to be a team player (e.g., cooperation, acceptance of roles, sportsmanship)
	09	Performs basic life skills (e.g., cleaning up, organizing, planning daily activities)
	10	Revises education map
	11	Recognizes and discusses potential negative consequences due to lack of service and volunteerism
	12	Volunteers for three hours and keeps a log of volunteer activities, including a reflection
	13	Creates a personal Wellness and Safety Plan

EM Strand	**Standard**	**EMPLOYABILITY LEVEL 8**
Core Resources: Level 8 Wellness Plan, Level 8 Activity and Assessment Guide **Digital Resources:** http://akcis.intocareers.org		
08.EM	**Employability Standards**	
	01	Assesses personal strengths, weaknesses, values and interests
	02	Creates a resume, cover letter and list of references
	03	Understands and practices interviewing skills and dressing appropriately for interviews
	04	Can identify and describe professional communication skills (firm hand shake, eye contact, appropriate introductions, cold-calling businesses, etc.)
	05	Lists five post-secondary options and the pros and cons of each
	06	Explores three rural careers, three urban careers, and three possibilities for small businesses
	07	Understands the need for equality, diversity, civility, and fairness
	08	Explores and practices a variety of conflict resolution strategies
	09	Consistently demonstrates a strong personal ethic (e.g., punctuality, attendance, best effort, good attitude, honesty, appropriate dress, and positive behavior)
	10	Performs basic life skills (e.g., plans day, follows schedule, solves everyday problems)

	11	Revises education map
	12	Independently volunteers for six hours and keeps a log of volunteer activities, including a reflection
	13	Maintains an updated personal Wellness and Safety Plan

EM Strand	**Standard**	**EMPLOYABILITY LEVEL 9**
Core Resources: Level 9 Wellness Plan, Level 9 Activity and Assessment Guide **Digital Resources:** http://akcis.intocareers.org		
09.EM	**Employability Standards**	
	01	Prioritizes three career choices based on personal strengths, weaknesses, values and interests
	02	Updates resume and list of references
	03	Uses various resources to demonstrate skills to locate and use information about careers, jobs, and postsecondary options
	04	Practices professional communication skills (firm hand shake, eye contact, appropriate introductions, cold-calling businesses, etc.)
	05	Interviews one person from a career of personal interest
	06	Understands the connection between education and career opportunities
	07	Understands the connection between career choice and resultant lifestyle
	08	Understands that businesses and corporations have a hierarchal structure and a chain of command
	09	Understands that both employees and employers have legal rights and responsibilities
	10	Displays dependability by exhibiting commitment, follow-through and strong work ethic
	11	Demonstrates flexibility, adaptability and resiliency while maintaining a positive attitude (through perseverance, acceptance, problem solving, and patience)
	12	Consistently applies non-violent conflict resolution strategies
	13	Revises education map
	14	Completes team service project following these steps: name three examples of possible service projects, complete needs assessment, evaluate the impact of various projects, design project, complete and evaluate
	15	Maintains an updated personal Wellness and Safety Plan

EM Strand	Standard	EMPLOYABILITY LEVEL 10
Core Resources: Level 10 Wellness Plan, Level 10 Activity and Assessment Guide **Digital Resources:** http://akcis.intocareers.org		
10.EM	**Employability Standards**	
	01	Develops a post-secondary plan that includes skills, abilities, strengths, weaknesses, values, and interests.
	02	Updates resume, cover letter, list of references; and gathers three letters of recommendation
	03	Applies and interviews for a specific job using resume, cover letter, list of references and letters of recommendation
	04	Demonstrates and independently uses professional communication skills (firm hand shake, eye contact, appropriate introductions, cold-calling businesses, etc.)
	05	Applies skills for creating and maintaining healthy social and professional relationships (uses tact, manners and communication skills)
	06	Demonstrates responsibility and accepts consequences of one's choices and actions
	07	Revises education map
	08	Initiates, coordinates, implements and evaluates a community service project
	09	Maintains an updated personal Wellness and Safety Plan

EM Strand	Standard	EMPLOYABILITY LEVEL 11
Core Resources: Level 11 Internship and Service Documents		
11.EM	**Employability Standards**	
	01	In partnership with an outside agency, initiates, coordinates and evaluates a community service project
	02	Obtains an internship locally. Implements employability and independent living skills resulting in a positive performance evaluation and a healthy lifestyle

CULTURAL AWARENESS GUIDE

Cultural Awareness Guide 2018-2019

A Summary:

When the Cultural Awareness Revision committee first got together in October 2017, it was decided that a complete overhaul of the standards was needed. The standards needed to become more culturally relevant to our unique school district and our unique communities. During the discussion, it was decided that within different cultures worldwide, there are Five Pillars of Culture. The first is Personal History or Identity--it is impossible to know a culture without knowing the people within it. The second is Language--this is a building block of any culture worldwide. The third pillar is Art/Dance--it is important to know how a culture expresses itself; it is a visual language component of culture. Pillar four is Food/Subsistence--it is very important to know how a culture sustains itself. Our last pillar is Building/Tools--knowing how a culture traditionally built/builds its structures is paramount to knowing that culture.

On the pages that follow, you will find the new CA standards, sample projects for each level and each standard within that level, an example of "Culture Week" activities, and a guide to being Culturally Aware in your own community. Each CA level follows the same pattern. The first standard (.01) is the Personal History or Identity, the second (.02) is Art/Dance, the third (.03) is Language, the fourth (.04) is Food/Subsistence, and the fifth (.05) is Building/Tools. Level 10 includes the Capstone project and you will find the project outline with the level 10 standard page. Levels 11 and 12 are above graduation minimum and include student self-assessment pieces.

There is one rubric for all of our Cultural Awareness levels, all of our standards. It is up to you, as the teacher, to determine if a student has met that standard to the level of expectation. Once a student has completed a standard, we ask that you upload documentation of the project (picture of project, written explanation, etc.) to the Google Drive folder specifically for Cultural Awareness projects. This is where we will begin to build our examples and sample project ideas, and also allow you and your students to see what other schools and students are creating.

Thank you to the Cultural Awareness committee and Staci Anelon for all of your hard work in creating these standards and project ideas! Here's to another great year at LPSD!

LPSD CULTURAL AWARENESS STANDARDS

CA Strand	Standard	CULTURAL AWARENESS LEVEL 4
Core Resources: See CA Guide for Teachers		
04.CA	**5 Pillars—Local Culture Focus**	
	01	Student completes a project showcasing an understanding of own personal identity and history. (Ex: Retell a local story or legend in own words)
	02	Student completes a project showcasing an understanding of local art and/or dance. (Ex: Student participates in local art/dance class)
	03	Student completes a project showcasing an awareness of local Native language. (Ex: Student can discuss that there are different languages spoken locally—may know how to speak a common word or phrase)
	04	Student completes a project showcasing an understanding of different local foods and subsistence practices. (Ex: Student learns and shares traditional stories about the proper care of subsistence foods)
	05	Student completes a project showcasing an understanding of local traditional building practices and tools. (Ex: Student knows and can demonstrate traditional transportation practices, i.e. dogsledding, using an umiak, snowshoeing, etc.)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 5
Core Resources: See CA Guide for Teachers		
05.CA	**5 Pillars—Other SW Alaska Culture Focus**	
	01	Student explores own personal identity and how it relates to other Southwest Alaska cultures. (Yup'ik, Cup'ik, Alutiiq, Dena'ina, etc.) (Ex: Rewrite a story/legend from another SW Alaksa culture and present it)
	02	Student uses a project to explain how local art and/or dance differ from other Southwest Alaska cultures. (Yup'ik, Cup'ik, Alutiiq, Dena'ina, etc.) (Ex: Student researches other types of SW art/dance and can report on differences—difference in dress or songs, basket weaving techniques, beading, etc.)
	03	Student completes a project explaining how local languages are similar, or different, to other Southwest Alaska cultures. (Yup'ik, Cup'ik, Alutiiq, Dena'ina, etc.) (Ex: Student learns how to say a common word or phrase in another SW Alaska language)
	04	Student completes a project showcasing their knowledge of different local foods and subsistence practices of a different Southwest Alaska cultures. (Yup'ik, Cup'ik, Alutiiq, Dena'ina, etc.) (Ex: Student learns about edible foods in other SW Alaska cultures/places; Student learns about different weather patterns across SW Alaska)
	05	Student shows knowledge of traditional building practices and tools indigenous to a Southwest Alaska culture other than their own. (Yup'ik, Cup'ik, Alutiiq, Dena'ina, etc.) (Ex: Student creates models of homes that might have existed in different areas around SW Alaska in the past)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 6
Core Resources: See CA Guide for Teachers		
06.CA	**5 Pillars—Alaska Cultures Focus (Outside of SW Alaska)**	
	01	Student compares own personal history and identity to another Alaskan culture (Eyak, Tlingit, Haida, Tsimshian, Inupiaq, Unangax, Russian etc.) (Ex: Rewrite and perform a story or legend from another Alaskan culture)
	02	Student completes a project in which they show their understanding of how local art and/or dance is similar or different to other Alaska cultures. (Eyak, Tlingit, Haida, Tsimshian, Inupiaq, Unangax, Russian etc.) (Ex: Student researches other types of Alaskan art/dance and can report on similarities or differences—similarities or differences in dress or songs, basket weaving techniques, beading, etc.)
	03	Student completes a project recognizing how local languages are similar, or different, to other Alaska cultures. (Eyak, Tlingit, Haida, Tsimshian, Inupiaq, Unangax, Russian etc.) (Ex: Student researches another Alaskan culture's language and can discuss similarities/differences—thematic words, months/days)
	04	Student completes a project showcasing their understanding of how local food/subsistence practices relate to other Alaska cultures. (Eyak, Tlingit, Haida, Tsimshian, Inupiaq, Unangax, Russian etc.) (Ex: Student creates a recipe book for various ways different groups of people across Alaska prepare salmon, or moose, or caribou, etc.)
	05	Student demonstrates proficiency with building practices and tools indigenous to an Alaskan culture outside of Southwest Alaska. (Eyak, Tlingit, Haida, Tsimshian, Inupiaq, Unangax, Russian etc.) (Ex: Student creates models of communities that might have existed in different areas all of Alaska in the past)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 7
Core Resources: See CA Guide for Teachers		
07.CA	**5 Pillars—Broad or Global Focus**	
	01	Student compares and contrasts their personal history and identity with a culture outside of Alaska. (Ex: Rewrite and illustrate a story or legend from a culture outside of Alaska and 'publish' for class/community)
	02	Student studies art and/or dance from a culture outside of Alaska and completes a project related that particular culture. (Ex: Student learns a dance from an Outside culture and performs it; Student creates a work of art from a particular culture and presents it to class)
	03	Student completes a project showcasing an understanding of how languages are similar, or different, throughout North American and/or Global civilizations. Ex: showing similiarities between Navajo and Dena'ina languages.
	04	Student completes a project in which they identify and explain global food and subsistence activities. (Ex: Student identifies other subsistence cultures and reports on different practices.)
	05	Student has an understanding of historically significant tools and building practices related to global civilizations. (Ex: Student compares/contrasts local building practices with a global culture's practices.)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 8
Core Resources: See CA Guide for Teachers		
08.CA	**5 Pillars—Local Focus**	
	01	Student has a deep understanding of personal history and identity and can compare and contrast that to local culture, either traditional or modern. (Ex: Using what you know about stories and legends, write/tell your own story or legend based around your culture, either traditional or modern)
	02	Student completes a project showing mastery of a traditional or contemporary art and/or dance related to local culture. (Ex: Student selects, researches, and practices a cultural craft with an Elder)
	03	Student completes a project which recognizes how languages are similar, or different, throughout their local area. (Ex: how does the English language relate to the local language? Can the student discuss code switching? Student makes a resource book for non-Native speakers)
	04	Student completes a project in which they show an understanding of food and subsistence activities relating to local practices. (Ex: Student documents a successful hunt (does not have to be their own) from preparation, to the hunt, to the use of the animal if successful; Student participates in summer/fall subsistence fishing)
	05	Student shows an understanding of historically siginificant tools and building practices related to local culture. (Ex: Student builds model barabara or umiak; Student learns net mending, tanning, basket weaving, etc.; Student learns about reading ice, river ice, river currents, etc.)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 9
09.CA	**5 Pillars—Global Focus**	
	01	Student has a deep understanding of personal history and identity and can compare and contrast that to global awareness. (Ex: Research the similarities between stories and legends across cultures worldwide and report your findings)
	02	Student completes a project showcasing understanding of art and/or dance related to global civilization. (Ex: Research how to do a type of art from a different culture and host an art workshop in which yout each that art form to others.)
	03	Student completes a project which recognizes how languages are similar, or different, throughout global civilizations. (Ex: Single-word representation projects, Storytelling translations, Resource book, etc.)
	04	Student completes a project showcasing understanding of food and subsistence activities relating to global civilizations. (Ex: Student hosts a World Foods Potluck.)
	05	Student completes a project showcasing understanding of historically significant tools and buildings related to global civilizations. (Ex: Student compares/contrasts local tools building traditions to a global culture—may create models of each)

CA Strand	Standard	CULTURAL AWARENESS LEVEL 10
10.CA	**5 Pillars—Capstone Project**	
	01	Student completes ***ONE*** capstone project encompassing all pillars, or looking at one pillar in depth. The project must be approved by the student's head teacher or principal, a community mentor (of the student's choice), and the Curriculum Director before the student begins his/her work.

CA Strand	Standard	CULTURAL AWARENESS LEVEL 11
11.CA	**Art and Culture**	
	01	Attend a live professional performance, or visit a museum or other venue for art.
	02	Produces and self assess a performance, concert/play, art show, or community celebration including organization, production, advertising

CA Strand	Standard	CULTURAL AWARENESS LEVEL 12
12.CA	**Art and Culture**	
	01	Participates in independent art project incorporating any culture. *Students will self-assess.

Cultural Guide for Levels 0-3: Many of these were taken from the SS standards for levels 0-3 and can be incorporated into your lessons, OR they may be tackled by the summer project coordinators during the summer programs. The summer project coordinator will not be marking off these standards, simply introducing them and creating projects to engage little ones in culture.

Level 0:

SS 00.01.01 Shares experiences that reflect family culture (camping, fishing, potlucks, hunting, storytelling, travel)

Practices songs and dances from a variety of cultures

Displays works of art

Identifies their basic family components (mother, father, brother, sister, etc.) (Terms may be in Yupik, Alutiiq, Dena'ina if so desired by the coordinator)

Level 1:

SS 01.01.01 Compares and contrasts family cultures (e.g. foods, language, religion, traditions) around the world

SS 01.01.02 Summarizes stories and/or songs originating from a variety of cultures

SS 01.02.01 Compares/contrasts school life in the past to school life in the present (parent/grandparent interviews, etc.)

SS 01.02.02 Tells a historical narrative about his/her own family

SS 01.02.03 Understands and makes family connections using the terms niece, nephew, sister, brother, uncle, aunt, cousin, grandparents, mom, dad, etc. (Terms may be in Yupik, Alutiiq, Dena'ina))

Identifies different aspects of world-wide cultures (art, crafts, holidays, customs…)

Shares unique characteristics of own cultural heritage

Level 2:

SS 02.01.01 Compares and contrasts different types of communities (village, city…)

SS 02.01.02 Summarizes and restates information gained by listening to and questioning a community member

SS 02.02.02 Presents a project on how the community has or might change using the terms past, present, and future (ex. Transportation, tools, clothing)

SS 02.03.02 Routinely locates his/her village and any nearby major bodies of water or land features (lakes, rivers, volcanoes, mountains) on a map of Alaska--Traditional place names may be used of so desired by the coordinator

SS 02.05.01 Presents information about how community members use local resources through drawing, writing, and/or discussion

Knows and correctly uses many different basic art materials, techniques, and processes

Identifies organizations and their functions within own community

Level 3: This level is an Alaska Studies level in social standards and many of the social studies standards or projects could be incorporated into the summer programs--again, not for being marked off as complete, but for introduction and engagement.

Project Ideas for each Standard and Pillar

Project Ideas based on Standards

CA Level 4

.01 Student completes a project showcasing an understanding of own personal identity and history.

EXAMPLES/Activities:

- Retell a local story or legend in own words
- Create a simple family tree
- Write a paragraph about a family member to share with class

.02 Student completes a project showing an understanding of local art and/or dance.

EXAMPLES/Activities:

- Student participates in local art/dance class
- Beading project

.03 Student completes a project showcasing an awareness of local Native language.

EXAMPLES/Activities:

- Student can discuss that there are different languages spoken locally- may know how to speak a common word or phrase
- Student can count to 10 in local heritage language

.04 Student completes a project showcasing an understanding of different local foods and subsistence practices.

EXAMPLES/Activities:

- Student learns and shares traditional stories about the proper care of subsistence foods.
- Berry picking
- Learn weather patterns

.05 Student completes a project showcasing an understanding of local traditions building practices and tools.

EXAMPLES/Activities:

- Students knows and can demonstrate traditional transportation practices, i.e. dogsledding, using an umiak, snowshoeing, etc
- Student helps to clean up a fish camp

CA Level 05

.01 Student explores own personal identity and how it relates to other Southwest Alaska cultures (Yupik, Cupik, Alutiiq, Dena'ina)

EXAMPLES/Activities:

- Rewrite a story/legend from another SW Alaska culture and present it
- Oral traditions project
- Compare/Contrast 2 Native communities

.02 Student uses a project to explain how local art and/or dance differ from other SW Ak cultures (Yupik, Cupik, Alutiiq, Dena'ina)

EXAMPLES/Activities:

- Student researches other types of SW art/dance and can report the differences in: dress, song, basket weaving techniques, beading, etc)
- Learn a song/dance from other SW Alaska culture

.03 Student completes a project explaining how local languages are similar, or different, to other SW AK cultures (Yupik, Cupik, Alutiiq, Dena'ina)

EXAMPLES/Activities:

- Student learns how to say a common word or phrase in another SW AK language

.04 Student completes a project showcasing their knowledge of different SW Ak cultures (Yupik, Cupik, Alutiiq, Dena'ina)

EXAMPLES/Activities:

- Student learns about edible foods in other SW Alaska cultures/places
- Student learns about different weather patterns across SW Alaska

.05 Student shows knowledge of traditional building practices and tools indigenous to a SW AK culture other than their own. (Yupik, Cupik, Alutiiq, Dena'ina)

EXAMPLES/Activities:

- Student creates models of homes that might have existed in different areas around SW Alaska in the past.
- Student can discuss different transportation methods from SW Alaska

CA Level 06

.01 Student compares own personal history and identity to another Alaskan culture (Eyak, Tlingit, Haida, Tsimshian, Inupiak, Unangax, Russian, etc.)

EXAMPLES/Activities:

- Rewrite and perform a story or a legend from another Alaskan culture.
- Research clans/tribes/peoples from Alaska and reports on differences/similarities to own culture

.02 Student completes a project in which they show their understanding of how local art and/or dance is similar or different to other Alaska cultures (Eyak, Tlingit, Haida, Tsimshian, Inupiak, Unangax, Russian, etc.)

EXAMPLES/Activities:

- Student researches other types of Alaskan art/dance and can report on similarities or differences in dress, song, basket weaving techniques, beading, etc.

.03 Student completes a project recognizing how local languages are similar, or different, to other AK cultures (Eyak, Tlingit, Haida, Tsimshian, Inupiak, Unangax, Russian, etc.)

EXAMPLES/Activities:

- Student researches another Alaskan culture's language and can discuss similarities/differences (thematic words, months, days, counting)
- Count to 10 in a different Alaskan heritage language

- Single word representation project

.04 Student completes a project showcasing their understanding of how local food/subsistence practices relate to other Alaska cultures (Eyak, Tlingit, Haida, Tsimshian, Inupiak, Unangax, Russian, etc.)

EXAMPLES/Activities:

- Student creates a recipe book for various ways different groups of people across Alaska prepare salmon, moose or caribou, etc.
- Student documents different subsistence foods across Alaska and how they are used

.05 Student demonstrates proficiency with building practices and tools indigenous to an Alaskan culture outside of SW Ak (Eyak, Tlingit, Haida, Tsimshian, Inupiak, Unangax, Russian, etc)

EXAMPLES/Activities:

- Student creates models of communities that might have existed in different areas of all of Alaska in the past.

CA Level 07

.01 Student compares and contrasts their personal history and identity with a culture outside of Alaska

EXAMPLES/Activities:

- Rewrite and illustrate a story or legend from a culture outside of Alaska and "publish" for class/community
- Discuss migration patterns of various cultures throughout the world

.02 Student studies art and/or dance from a culture outside of Alaska and completes a project related to that particular culture.

EXAMPLES/Activities:

- Student learns a dance from an 'outside' culture and performs
- Student creates a work of art from a particular culture and presents it to class
- Research traditional clothing/headdresses/masks from another culture, create example to share with class

.03 Student completes a project showcasing an understanding of how languages are similar, or different, throughout North American and/or global civilizations.

EXAMPLES/Activities:

- Showing similarities between Navajo and Dena'ina languages.

.04 Student completes a project in which they identify and explain global food and subsistence activities.

EXAMPLES/Activities:

- Student identifies other subsistence cultures and reports on different practices.
- Student prepares a dish from another culture to share with others and can explain how that dish is significant to the culture

.05 Student has an understanding of historically significant tools and building practices related to global civilizations.

EXAMPLES/Activities:

- Student compares/contrasts local building practices with a global culture's practices.
- Student makes a model of a historically significant tool or structure from a global culture

CA Level 8

.01 Student has a deep understanding of personal history and identity and can compare and contrast that to local cultures, either traditional or modern.

EXAMPLES/Activities:

- Using what you know about stories and legends, write/tell your own story or legend based around your culture, either traditional or modern
- Interview and elder about life in the village when they were young—compare/contrast to modern life in the village today
- Create detailed family tree going back as far as family can remember
- Record oral traditions and transcribe for publication
- Create a list of cultural values after meeting with community elders to discuss those values

.02 Student completes a project showing mastery of a traditional or contemporary art and/or dance related to local culture.

EXAMPLES/Activities:

- Student selects, researches, and practices a cultural craft with an elder.
- Fur sewing, beading, leather sewing
- Create unique form of art using local materials (fish skin, pine/spruce needles, sand, etc.)
- Basket weaving
- Participate in NYO events

.03 Student completes a project which recognizes how languages are similar, or different, throughout their local area.

EXAMPLES/Activities:

- How does the English language relate to the local language?
- Can the student discuss code switching?

- Student makes a local language resource book for non-Native speakers.
- Participate in “Speech Meet”

.04 Student completes a project in which they show an understanding of food and subsistence activities relating to local practices.

EXAMPLES/Activities:

- Student documents a successful hunt (does not need to be their own) from the hunt preparation, to the actual hunt, to the use of the animal, if successful.
- Student participates in summer/fall/winter subsistence hunting, fishing, or gathering
- Student documents trapping practices (does not need to participate) from the trap preparation, to different trapping practices in the area, to the use of the animal/fur, if successful.

.05 Student shows an understanding of historically significant tools and building practices related to local culture.

EXAMPLES/Activities:

- Student builds model barabara or umiak
- Student learns net mending, tanning, basket weaving, etc
- Student learns about reading ice, river ice, river currents, etc.

CA Level 09

.01 Student has a deep understanding of personal history and identity can can compare and contrast that to global awareness.

EXAMPLES/Activities:

- Research similarities between stories and legends across cultures worldwide and report your findings
- Create a cultural atlas or map of a specific people or area
- Document human migration stories
- Assess the impact of globalization (mass media, gender equality, etc.) on traditional cultures worldwide

.02 Student completes a project showcasing understanding of art and/or dance related to global civilization.

EXAMPLES/Activities:

- Research how to do a type of art from a different culture and host an art workshop in which you teach that art form to others. (Example: sumi-e art)

.03 Student completes a project which recognizes how languages are similar, or different, throughout global civilizations.

EXAMPLES/Activities:

- Single-word representation projects

- Storytelling translations
- Resource book
- APEX language course
- Student learns sign language
- Student can identify ways to overcome cultural differences in communication

.04 Student completes a project showcasing understanding of food and subsistence activities relating to global civilizations.

EXAMPLES/Activities:

- Student hosts a World Foods potluck
- Student creates a recipe book with traditional foods from various cultures—can be shared with class or community

.05 Student completes a project showcasing understanding of historically significant tools and buildings related to global civilizations.

EXAMPLES/Activities:

- Student compares/contrasts local tools and building traditions to a global culture
- Student creates models of each type of tool or building researched (Ex: Diorama, papier mache, wooden model, drawings)

CA Level 10 (Graduation Minimum)

.01 Student completes ONE capstone project encompassing all pillars, or looking at one pillar in depth. The project must be approved by the student's head teacher or principal, a community mentor (of the student's choice), and the Curriculum Director before the student begins his/her work.

*See Level 10 Capstone Plan Outline on three next pages.

CA Level 11

.01 Attend a live professional performance, or visit a museum or other venue for art.

.02 Produces and self-asses a performance, concert/play, art show, or community celebration including organization, production, advertising.

CA Level 12

.01 Participates in independent art projects incorporating any culture. * Student will self-assess.

Project Ideas based on Cultural Pillars

The following are other project ideas for each of the 5 Pillars. They may be done individually or as class projects. Some are repeats of the projects listed above.

Personal history/Identity:

Interview with an elder--prepare a report of some type to present information gained.

Family tree—heritage project

Retelling of story/legend

Short biography of family member

Gather oral and/or written history of local community or family

Cultural atlas/map

Compare/contrast two native communities

Record oral traditions on drive and transcribe or present

Family or Place Name meanings—either Native name or local name

Research clan/tribe

Occupational histories (family occupations)

Human migration stories (map it out)

DNA mapping—study YOUR particular history

Research the state / country you were born in

NYO

Research into canning industry

Cultural Exchange

Photos project showing personal life history

Who am I Project

Attend Elder/Youth Conference, and/or AFN as a whole

Attends/participates in a village council meeting

Create a list of traditional cultural values after meeting with Elders to discuss what those values are--compare/contrast them with contemporary values

Assess the impact of globalization (mass media, gender equality, etc.) on traditional, local heritage

Describe how AK Native culture has changed over time--compare traditional and contemporary forms.

Cite examples of how cultural beliefs and institutions, including modern mass media, influence personal decision making.

Create a list of cultural values.

Shows an understanding of the purpose of cultural practices and rituals

Demonstrate an understanding of local governance by creating an appropriate visual display

Take aspect of traditional culture and make it modern

Spend a day with an elder, helping out

Language (depending on level…)

Thematic words to complement presentation

Count to ten in a different language

Months/days

Yes, no, please, thank you (common words/phrases)

Alphabet

Apex Language course

Sing happy birthday in another language / memorize a poem

Make a resource book for another language or own Native language

Single word representation

Complete a self-directed study of one specific culture and language.

Progression/regression of language

DuoLingo--language app

Elders reading stories written by students

Sign language--signing a song or story

Storytelling - translation into a different language

Identify ways to overcome cultural differences in communication

Learn local indigenous languages from elders

Participate in local indigenous language and dance lessons

Art/dance

Learn or Create song/dance

Beading

Fur Sewing

Basket weaving

Carving

Traditional clothing/headdresses/masks

Attends a local art class

Creates and sells arts or crafts

Jewelry

Create a unique form of art using local materials (i.e. fish skin, pine/spruce needles,

Art workshop with final project

Artists in School Residence Participation and final project

Glass floats--beading or macrame

Speech Meet (annual Port Alsworth memorize a “speech” event)

Poetry OutLoud

NYO

Select, research, and practice a cultural craft with an Elder

Identify geographic influences on Alaskan art and culture, including subsistence

Creates, displays, or performs works of art for an audience

Food/subsistence

Berry picking

Recipe book

Documenting hunt (preparation, hunting, use of food if successful)

Creating and sharing a traditional dish/cooking over a fire

Canning a local food / Smoking fish

Weather

Ecological relationships

Filleting, processing fish/moose/other animals

NYO

Food Festival

World Foods Potluck--anyone doing a global study would research and prepare a dish traditional to that country/area

Set up and operate a traditional fish/hunting camp

Practice local survival skills/Teach local survival skills to an outside audience.

Learn traditional stories that tell about the proper care of animals

Building/tools

Chop wood

Create Bow/arrow/spear

Trapping (participating in trapping, learning to set different traps, tracking animals, learning to skin an animal, learning proper care of certain animals according to their culture.)

Traditional crafts / woodcarving

Traditional fishing / hunting methods

Traditional transportation - i.e. dogsled, snowshoes, etc.

Tanning

Basket weaving

Net mending

Cleaning up a fish camp

Helping to renovate a building

Participating / working on local construction projects (their family building a house, steambath, or smokehouse; summer job, etc) (Could this be an experience out?)
Learn how to read Maps/Compasses/Outdoor survival skills/Winter survival

Learn about reading ice, river ice, river currents

Model of traditional homes (papier mache)

Umiak Building

Building a model barabara

Culture Week Example

Culture week is a week set aside every year for students to connect with, and teachers to learn more about, the local heritage culture. Every community does this a little differently, from all day events, to hour long classes each day, to half-day intensives. It's a good idea to connect with the LSAC and your principal to get a good idea as to how this has worked in the past.

"Station" ideas

- Food/cooking (fry bread, aqutuk, moose/caribou/ bird soup, baked salmon/or other fish)
- Subsistence food preparations, using whatever berries, animal, bird or fish that may be available
  (skin a moose/caribou, cut up an animal and learn to properly store meat (freeze, dry, etc.). Learn to identify animal's liver, kidneys, heart, guts/book and other edible parts of the animal; pluck a duck/goose, spruce hen; gut and fillet a fish and learn how to preserve it (dried, smoked, jarred, frozen); rendering seal fat into seal oil
- Storytelling. Invite in several elders and/or community members. It is best to have at least 3 or 4 storytellers
- Sewing (kuspuks, skin sewing- yo-yo's or other similar small, do-able project; slipper making, fur sewing- like beaver hat and/or gloves; dance fans, dance head dresses)
- Knot tying/net mending
- Carving (wood, bone, or ivory depending on resource)
- Beading (could include glass floats, bracelets, rings, leather)
- Traditional language speaking (may be joined with storytelling session) could also include 'string stories'
- Native Youth Olympics demonstrations and practice
- Animal calling
- Traditional medicinal gathering/preparations (spruce needles, willow buds, Labrador tea, greens for coughs, etc.)
- Identify edible mushrooms, fiddle heads, wild spinach, wild rhubarb, wild onions, wild celery
- Books/resources/quick fact sheets, coloring/drawing sheets of animals, birds, fish, plants, etc. specific to local area. Could also have "match the animal to the animal print"
- Traditional dancing, drumming, and songs

*****Lake Clark National Park and Preserve (Port Alsworth) and Katmai National Park (King Salmon) are great resources for educational programs or activities.

Lake Clark National Park: (907) 781-2218; https://www.nps.gov/lacl/index.htm

Katmai National Park: (907) 246-3305; https://www.nps.gov/katm/index.htm

Level 10 Capstone Plan Outline: Cultural Awareness Project

Select Pillar

Circle all that apply

Personal History/ Identity Building/Tools | Language | Art/Dance | Food/Subsistence

Who - who is involved in this project (i.e. elders interviewed, instructors from a class, presenter, ect). If you are doing a group project state the names of people in the group.

What - What will you be doing. What culture is the activity from? Please list activities, events, etc.

Where - Where will this take place?

When - When do you plan on doing this activity. How long will it take you? (i.e. a 3 day conference, week long camp, 10 weeks) Please include estimated dates.

Why - Why did you decide to do this activity? Why is it important?

How - How will you complete this project? How does it relate to your culture or the culture you are studying?

Other notes:

Cultural Awareness Rubric

	Advanced	Proficient	Developing	Emerging
Presentation/ Display	• Presents to a community entity such as LSAC, tribal, potluck, etc OR displays in a public entity such as community center, village/tribal office, classroom, school, etc. • Includes exemplary visual aid such as videos, poster, pictures, slideshow presentation, etc. • Exhibits excellent communication skills if presentation occurred (i.e eye contact, dress appropriately, speaking voice).	• Presents to a community entity such as LSAC, tribal, potluck, etc OR displays in a public entity such as community center, village/tribal office, classroom, school, etc. • Includes visual aid such as videos, poster, pictures, slideshow presentation, etc. that relate to the specific pillar or culture being studied • Communication skills were moderate if presentation occurred.	• Presents in front of a small group of at least two people. Could include teachers, peers, principal, community members. • Includes visual aid such as videos, poster, pictures, slideshow presentation, etc. but it may not relate to specific pillar or culture being studied. • Communication skills were limited if presentation occurred.	• Has not presented or displayed project. • No visual aid prepared.

Content/ Facts	• Student shows deep understanding of the pillar or pillars. • Project contains at least 5 sources. * • Student skillfully relates project to the culture being studied. • If multiple cultures are studied, the student accurately links cultures using the specific pillar.	• Student shows understanding of the pillar or pillars. • Students work shows at least 3 sources.** • Student relates project to the culture being studied. • If multiple cultures are studied, the student links cultures using the specific pillar.	• Student shows limited understanding of the pillar or pillars. • Student's work has at least 1 source. • Student's project does not relate to the culture/pillar being studied • If studying multiple cultures, no link is identified.	• Student's project was lacking content and facts. • Student does not have any sources. • Student's project does not relate to the culture/pillar being studied.
Creativity/ Originality	• Student's work is creative and shows his or her own personality. • Students work shows excellent originality. • Student's work is unique to his/her culture or the culture being studied.	• Student's work is creative and shows some originality. • Student's work is unique to his/her culture or the culture being studied.	• Student's work lacks creativity and originality. • Student's work show minimal link to his/her culture or the culture being studied.	• Student's work shows no creativity or originality.
Effort	• Project is sustainable in some way. • Project is uploaded to the google drive folder for future reference. • Project includes a plan outline (who, what, where, when, why, how).	• Project is uploaded to google drive folder for future reference. • Project includes a plan outline (who, what, where, when, why, how).	• Project has not been uploaded to the google drive folder. • Has incomplete plan outline.	• Project has not been saved to a public place. • Has incomplete plan outline or no outline at all.

*Advanced for levels 4-6 would include 3 sources.

** Proficient for levels 4-6 would include 2 sources.

Self assessment：Student should use rubric to self-assess before presenting to teacher.

Visual Aid：Your visual aid can include and is not limited to: poster, video, slideshow, booklet.

Sources：May include, but not limited to: personal interviews, book sources, internet sources, conferences, etc. (Ex:If going to AFN, taking notes from speakers, talking to others there, taking pictures of AFN, keeping any handouts or pamphlets.)

Project sustainability: Examples could include how it benefits the community, is recorded for future reference, can be used in the future, etc. Displayed in a public place.

Cultural Awareness in Our Communities

I was asked to write these Cultural/Community Guidelines to be used as a resource, and it is by no means an "official document" of any kind! Events that happen in one community may be totally different than in another, but the hope and intent of this is to offer you some guidance. I am of Yupik Eskimo descent. I have lived in rural Alaska all my life. I have been an educator for 24 years in several communities. Newhalen has been my home for over 20 years. –Staci Anelon

When coming into any new community, there are certain community norms to follow; some are obvious, while others are very subtle, but equally important. I will speak to several main community expectations to help you settle into your community with ease and knowledge for a successful year.

FUNDRAISING

Within our communities, there are many fundraising activities that occur. There are school/sports fundraising, as well community fundraising events. If you are able, it is always a nice gesture to support the fundraiser by buying a raffle ticket, a dinner plate, or similar.

FUNERALS

When a funeral takes place in our communities, the loss is felt by the entire community. Your students will be effected even though they may not have been related to the person, or have known them very well; however, their parents, grandparents and other family members will have known that person, and our students will be impacted by the emotional stress within their families and community. You may or may not know the person who has passed away, but you should reach out to the family regardless. On the day of the funeral, you are welcome to attend the church ceremony. If you are not comfortable with that, offer to help at the grave site, or prepare food for the potluck that will follow the ceremony and/or stay and help clean the community building after the ceremony by washing dishes, sweeping/mopping and taking out the trash. Your time and energy will be greatly appreciated.

WEDDINGS

Weddings happen in our communities as well. While you may not know the couple, it is nice if you offer to help decorate the reception area, cook/bake food for the reception, and/or offer to help clean up afterwards.

GRADUATIONS

In the spring, our communities host high school graduations. This is a very joyous day for all. Some communities may ask for help planning, decorating, and cooking for the occasion. Pick up the cues of those at the ceremony of where and when to step in and assist. Families of the graduates should always be given the first opportunity to congratulate the graduates in the receiving line. Many times, relatives from near and far have flown in just in for the ceremony.

CARNIVALS

To help combat cabin fever, many communities host a community carnivals starting in February and running through March/April. Most communities have an established Carnival Committee that meets regularly to plan the annual event. You are welcome to attend these planning meetings, bring new ideas and to see where you may want to jump in and volunteer as there are many, many opportunities for you to do so. Communities in close proximity to one another often coordinate the dates of their carnivals so they do not overlap and interfere with one another. These carnivals are highly anticipated by all in community, and are generally heavily attended by surrounding villages as well. The carnival usually kicks off events on Friday and end on Sunday with a potluck banquet dinner. Often times, the Local School Advisory Committee (LSAC) will choose to take the following Monday off as a floating spring break day. Check with your principal and review your site calendar to be sure of those dates.

POTLUCKS

Our communities hold many community potlucks. These are wonderful ways to meet and visit community members. Often times, there is one hosted by the Local School Advisory Committee (LSAC) at the beginning of the school year to welcome back students and staff. Everyone is always invited and welcome to attend. Plan to bring a potluck style dish to share as well. Again, assisting with set-up/clean-up is greatly appreciated.

INVITATIONS

Community members will often be eager to invite you to various happenings within their families and/or community. It is best to accept these invitations when offered to begin building instrumental relationships. Lesson planning, class preparations, grading can wait. If invitations are declined, chances are you will not be asked again, so jump quickly on invites outside of the school.

Chances are you will be invited to visit individual homes in your community, or you may receive visitors at your home. Some folks will be very talkative and will inundate you with questions. Others prefer to visit by just being in your presence and not necessarily talking as much. While this may seem awkward at first, don't feel that you need to fill the silence with talk. Follow the lead of your visitor.

In most all of our communities, steam baths are a nightly ritual. A steam bath is similar to a sauna. Just about every family has one in their yard and they are lit and enjoyed daily. Men steam with men and women steam with women as everyone strips down to their birthday suits and treats the steam much like a bath, with basins of water filled for washing and rinsing. There is a "hot room" and a "cold/cooling room." It is not frowned upon if you choose to wear under garments, and treat the steam as a regular sauna. Don't hesitate to step into the "cool room" if you start to overheat!

During hunting season, you may be invited along. Hunts could be for large animals like moose and caribou, or a bird hunt. You may also be invited to check snares or traps. If you don't have the right gear, ask. Chances are, you'll be outfitted. Make sure that you have your hunting licenses all in order.

Fishing, in most of our communities, is incredible. There are various ways to fish: ice, rod and reel/fly and nets for subsistence fishing. Again, make sure that you have purchased the correct fishing licenses.

GOVERNMENT STRUCTURE

All of our communities in the Lake and Peninsula School District are governed by the Lake and Peninsula Borough. Assembly members are voted into office and there is a good chance that an assembly member, or school board member, may live in your same community.

Each village has a federally recognized tribal government.

Some communities are established 1st class cities. As a resident of the community, you are eligible to actively participate in the city government as a voter. If you desire to run for a city council seat, it is best to ask local community members their opinion of your decision before throwing your name in the hat. Some villages prefer to have locals sit on these councils.

Every community has a village corporation and they own most of the land surrounding the community. The village corporation has land use permits that you can purchase for a small fee. It is recommended that if you wish to go on their land for any reason, like walking, hiking, etc., to obtain a land use permit from the village corporation office prior to entering their land.

If the land is not owned by the local corporation, it may be owned by a private land owner. It is best to ask whose land is who's before you set out exploring on it and ask their permission to use it out of respect.

SAFETY

Due to State budget cuts, many communities do not have law enforcement. State Troopers are dispatched from major rural hubs when the need arises.

Some communities do have Village Public Safety Officers (VPSO). If your village does not have one, like the State Troopers, they are dispatched when needed. Your principal will have their phone numbers.

We do have wildlife close, if not within our communities. Be very cautious and always be aware of your surrounding at all times. It is best to walk and/or explore with at least one other person. At the very least, always let someone where you are going and when you are expected back.

HUMOR

Many community members use humor to help break the ice. It is not intended to be malicious in any way, so do not take it personally. If you are comfortable, use your humor as well to ease situations.

COMMUNICATION

Community members will be very curious about you. They may show up at your home to visit, some visits will be prearranged, while others will be unannounced. Some visitors will be very talkative, while others will just sit quietly and rarely speak. This silence is not meant to be awkward, though it will seem so. Picture albums are great talking points to show your home, family and possibly your cultural heritage.

At the very least, strive to publish at least one class newsletter on a monthly basis, weekly is even better. This is a great way to convey class and school events to help keep all families informed of upcoming activities.

Many communities do have access to the internet, however, not all do. Keep this in mind as you email class letters, or messages to families. If you prefer, ask your parents for their phone numbers and email addresses, and ask how they prefer to be contacted.

Like we ask of our students, show active listening skills when interacting with community members and students and feel free to ask questions about the community, their family, etc…

When interacting, try to always listen more and talk less. Make it a point to learn the names of your students as quickly as you can and establish who their immediate family members are as well.

RELIGION

The majority of our communities are of the Orthodox faith. Some communities may have a different denomination as well. Within each affiliation, there may be specific traditions and restrictions. Ask your local school staff members for more information.

ALCOHOL/ RECREATIONAL DRUGS

All communities within the Lake and Peninsula Borough prohibit the selling any type of alcoholic beverages, and there are no bars or liquor stores. Most communities are considered “damp”, basically meaning you may possess alcohol for personal use. Be sure to check with your community airlines to see what their restrictions are for shipping in spirits. If you do choose to partake, use your best personal and professional judgment.

The State of Alaska legalized marijuana. Your principal will be able to speak more directly to the District’s stance on such matters.

GAMBLING

Many communities do have BINGO. Some community members also play other card games at their homes on a fairly regular basis. Be cautious when accepting invites to card games.

(Gambling of any kind is not allowed in any District housing or on school campus.)

VOLUNTEERING

There is always a need for volunteers within our communities. This is a great way to interact and establish relationships in your communities.

If you have a skill you’d like to share, that also is a wonderful way to become an active member of your community. When the opportunities arise to partake in a class offered in your community, like fur sewing, net mending, sewing… take it!

Volunteering gives you a chance to better know your parents, students and other community members outside of the academic/ school setting. However, remember to keep a balance and don’t over volunteer to the point of burning out.

Tribal Entities by Village

Port Alsworth: Port Alsworth Improvement Corp.; (907) 781-2215 (fax)

Nondalton: Nondalton Tribal Council; nondaltontribe@yahoo.com; (907) 294-2257

Iliamna: Iliamna Village Council; ivc@iliamnavc.org; (907) 571-1246

Newhalen: Newhalen Tribal Council; newhalentribal@yahoo.com; (907) 571-1410

Kokhanok: Kokhanok Village Council; kokhanok_vc_a@yahoo.com; (907) 282-2202

Igiugig: Igiugig Village Council; alexannasalmon@gmail.com; (907) 533-3211

Levelock: Levelock Village Council; levelockadmin@bbna.com; (907) 287-3030

Pilot Point: Pilot Point Tribal Council; pilotpointadmin@bbna.com; (907) 797-2208

Port Heiden: Port Heiden Village Council; admin@portheidenalaska.com; (907) 837-2296

Chignik Lake: Chignik Lake Traditional Council; chigniklakevillagecouncil@gmail.com; (907)845-2212

Chignik Lagoon: Chignik Lagoon Tribal Council; clagoon@gci.net; (907) 840-2281

Chignik Bay: Chignik Bay Tribal Council; cbaytc@aol.com; (907) 749-2245

Perryville: Native Village of Perryville; perryvilleadmin@bbna.com; (907) 853-2203