

Aurora Science Class Overview Mr. Stith: Grade 6 & 7 (9/20)

Welcome:

Welcome to Aurora Science! I have both sixth and seventh grade students. In school, science is hands-on, with lots of activities. During Remote Learning, I cannot assume students will have access to certain materials. So, some students may conduct hands-on activities independently; others may watch me do them via a Google Meet. In any event my goal is to ignite in students, both an interest in science, and an awareness of how science is relevant in their lives.

Units of Study--Grade 6:

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|----------------------------|--------------------------|
| I. Acting Like a Scientist | II. Properties of Matter |
| III. Cells and Genetics | IV. Properties of Energy |
| V. Magnetis | VI. Electricity |
| VII. Forces and Motion | VIII. Sound & Light |

Units of Study--Grade 7:

- | | |
|----------------------------|-------------------|
| I. Acting Like a Scientist | II. Ecology |
| III. Astronomy | IV. Earth Science |

Structure of Units:

Skills unit:

We begin the year with a unit called “Acting Like A Scientist”. Science **process skills** and **practices** are the focus of this unit. After this introductory unit, these will be **part** of all content units. The process skills and practices include:

- ❖ Recognizing scientifically testable questions
- ❖ Making plausible predictions
- ❖ Carrying out safe investigations

- ❖ Controlling *variables*
- ❖ Recognizing *controls*
- ❖ Measuring accurately
- ❖ Recording data in a *data table*
- ❖ Graphing data
- ❖ Analyzing data
- ❖ Drawing conclusions based on evidence,
- ❖ Communicating conclusions clearly

Content units:

Students conduct a series of assigned activities in each content unit. They may work alone or with partners. (Yes, even in Remote Learning, students may work with partners. Last year, most did not, but it is an option.) There are questions to investigate, answer, and submit to Google Classroom. All students should have a **science notebook**. For some activities, little or nothing may need to be written in the notebook (answers can be typed directly into Classroom). In other activities, **diagrams** are required. These should be drawn in notebooks. Then a photograph can be submitted to Classroom. ***It is helpful to have all work for a given unit in the same section of a notebook.*** Students use the work on these activities to prepare for the unit summative assessment.

Grading Categories:

Grade 6: There are **six** grading categories in grade 6 science, five of which are academic. The other, **Self Direction (SD)**, consists of vital skills for success in school and life. Self Direction skills include keeping organized notes, completing and submitting work on time, following directions, and taking advantage of redo opportunities.

Here are the five **academic** grading categories:

- Science Process Skills
- Properties of Matter
- Properties of Energy
- Forces & Interactions
- Cells, Organisms, and Inheritance.

Grade 7: There are **seven** grading categories in grade 7 science, six of which are academic. The other, **Self Direction (SD)**, consists of vital skills for success in school and life. Self Direction skills include keeping organized notes, completing and submitting work on time, following directions, and taking advantage of redo opportunities.

Here are the six **academic** grading categories:

- Science Process Skills
- Properties of Matter
- Properties of Energy
- Interrelationships between organisms and their environment
- Earth-Sun-Moon Interrelationships
- Forces & Interactions

A primary goal of science is for learners to master science process skills. That is why an entire academic standard (**science process skills**) emphasizes **doing** science.

Standards-Based Grading:

Fifth graders were used to standards-based grading in elementary school (as opposed to letter grades.). And, $\frac{2}{3}$ of the seventh graders are used to this from last year's Monsoons and Tsunamis.

All assessments will be scored as a 1, 2, or 3.

Understanding is evaluated and scored in the following way.

- 1: Learner demonstrates little or no understanding of the concept(s).
- 2: Learner demonstrates **some** understanding, but not consistently, and/or the student relies on the teacher for guidance.
- 3: Learner shows complete, consistent, and independent understanding.

How well a student masters Cells & Genetics has little relevance for how he or she performs in other units. For that reason, **scores are not averaged among categories!** So instead of the **single** question, “How is my child doing in science?”, you must now ask **multiple** questions.

“How well does my child appear to understand basic properties of matter?”

“How consistently does my child practice proper self direction skills?”

If students lack understanding of a concept, I will **guide** the student to a better level of understanding. Memorization is not what we are after, and often **students must put significant effort into truly understanding ideas**. Self-reflection is part of the process. Students are soon able to correctly identify their understanding as a 1, 2, or 3.

When a student completes all required activities, he or she begins working on the product. [**Note:** Acting Like A Scientist requires graphing, but no other formal product.] Each unit product requires students to demonstrate understanding of only a few key concepts. These Product Goals are given at the beginning of the unit. Although learners may complete a product with one or two other students, **each learner is interviewed separately** on the product. Occasionally, one person in a group does far more work than another; this shows up during interviews!

Website Resource:

Here is my personal website: www.stithsonianscience.com How should learners use it?

The **navigation section** can be found at the top right of the home page. The left column lists our units. Here’s how each **unit page** is set up:

Top section—left column:

- Unit’s product goals.
- Unit outline.
- “I can” statements outline,

The **product goals** specify the concepts learners are expected to learn and demonstrate by the end of the unit in their **summative assessments**. (These are always the unit’s **big ideas**.)

The **unit outline** shows the progression of ideas in the unit. Think of it as an answer key to the “I can statements” outline.

Top section—right column:

- Button that links to the activities in Google Drive.
- Socrative Unit Assessment
- [Quizlet electronic flashcards](#)

All activities I put in Classroom can be accessed through my **Google Drive** button.

Near the end of each unit students must take the Socrative Assessment. This is another **Summative Assessment**. Socrative provides learners with **immediate feedback** on answers, and more importantly, **the reason for the answers**. If students are not satisfied with their results on the Socrative Assessment, they may retake it. But, I want them to wait **at least 24 hours** between sessions, so they are not simply memorizing answers.

Note: At this time the Londonderry School District is not allowing teachers to use Quizlet with our students, unless students can access Quizlet without inputting any personal information. Throughout the unit students may go to **Quizlet** to practice vocabulary. The big ideas of the Product Goals require students to understand this vocabulary.

Bottom section:

- Other Cool Resources.

Here are fascinating videos or simulations related to the unit. Seeing how concepts are part of “everyday life” is extremely useful for **all** learners. Students who thrive in science are able to pursue topics more deeply through Other Cool Resources. Take a look!

What if my child needs help in science?:

Most days students will meet at the beginning of class for 10-15 minutes. Then they may work independently. I will be available for the rest of that class to help students.

In addition, we can work out times for individual Google Meets. If I see a student is struggling, I will schedule an individual or small group time in class.

Engineering Assignments and Family Science:

When we were in school, these were areas in which many students thrived. I did not require any Engineering Assignments last year during remote learning. This year I plan to see how things go. I did offer a Family Science projects last spring, and a small number of students did a great job on these!

Twice per trimester I assign **Engineering Assignments**. These typically involve the construction of improbable-acting contraptions I demonstrate in class. To see the contraption outside of class, there is a video of it on the “Student-Created Work” page of my website. Engineering Assignments count as SD grades and scored as follows:

- 1: No attempt shared.
- 2: Attempt shared, but only minimal time and thought displayed, or turned in late.
- 3: Attempt shared on time that shows quality time and thought (It need not work!).

Family science projects are offered once per trimester. As the name implies, all members of the family are encouraged to take part. Although family science projects are ***not required***, I see no reason why students should not regularly attempt them. These projects provide students with what they need most to become stronger science students--***experience!*** I show family science project videos in class, but these can also be viewed on the “Family Science” page of my website.

Redos:

Redos should be the rule, not the exception! One should expect that only trivial ideas (state capitals, vocabulary, arithmetic facts) be mastered on the first try. Work in all categories, **except SD**, can be redone to demonstrate deeper understandings. When I interview a learner I explain exactly what is lacking (if it is not a “3”). Students have the opportunity to improve their products and re-interview. They can do so as many times as needed.

Parent Info Page:

I periodically write up information especially useful for parents. This can be found on the “**Parent Info**” page. I don’t have room here to explain every other page on my website, but am always happy to discuss this with interested parents!

If there are any questions, please feel free to email me at dstith@londonderry.org.