Shooting for STAAR!

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Instructional Platform

Instructional Delivery

Instructional Strategies

VOCABULARY

Research and Information

Use Formal Mathematics Language

Instead of that...	Say this...

VOCABULARY

Use Terms With Precision

Strategies for Teaching Mathematics Language

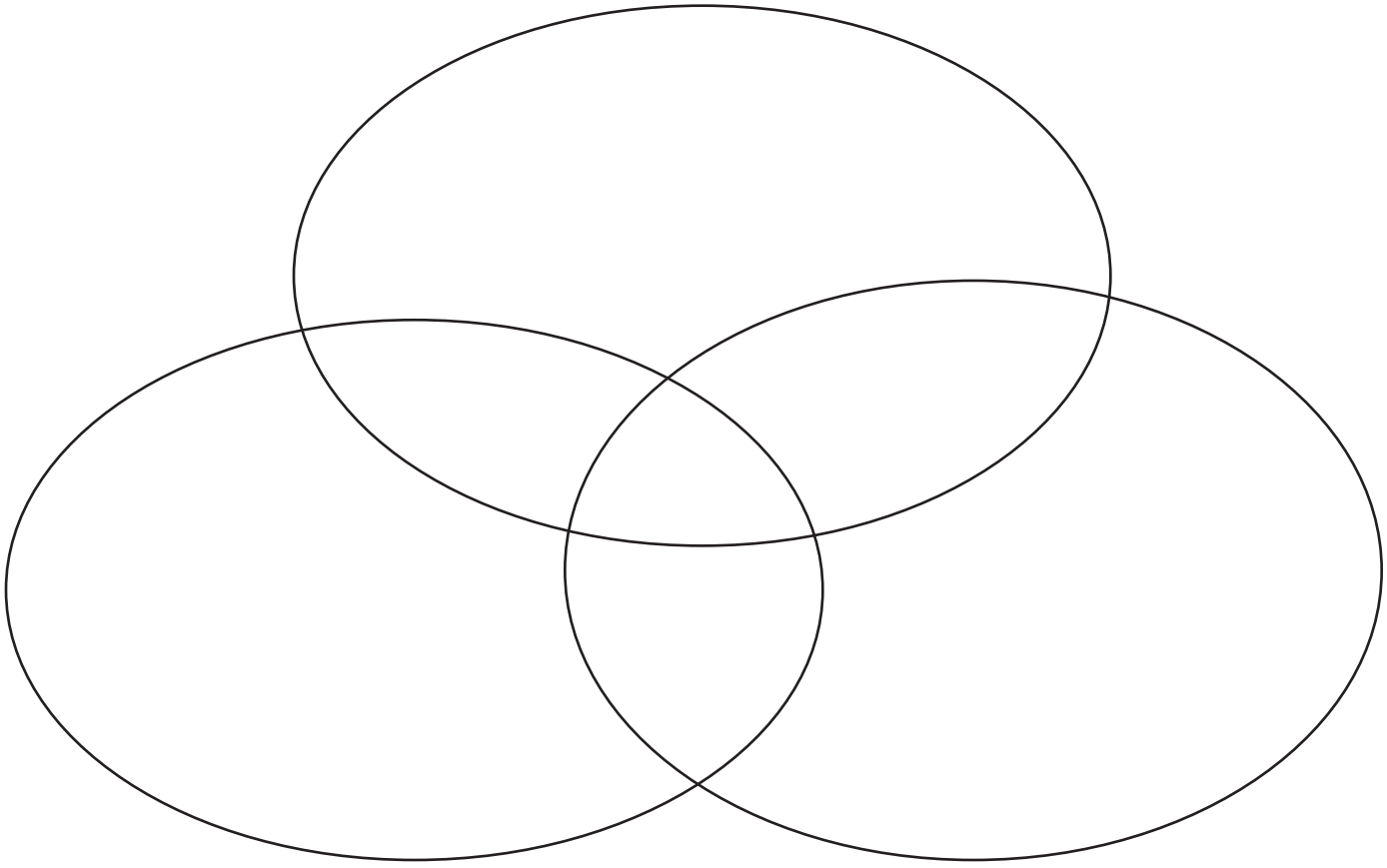
What are your strengths?

What are your opportunities for growth?

What are your plans for next Monday?
Next month?
Next year?

REPRESENTATIONS

Research and Information



bit.ly/srpowell

REPRESENTATIONS

STAAR Representations

STAAR Item	Representations

What are your strengths?

What are your opportunities for growth?

What are your plans for next Monday?
Next month?
Next year?

MODEL AND PRACTICE

Research and Information

MODELING

PRACTICE

SUPPORTS

MODEL AND PRACTICE

Problem	Step-by-Step Explanation

MODEL AND PRACTICE

Problem

Practice Opportunities

High-Level Questions

Low-Level Questions

Affirmative Feedback

Corrective Feedback

MODEL AND PRACTICE

What are your strengths?

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What are your plans for next Monday?
Next month?
Next year?

FLUENCY

Research and Information

Types of Fluency

Type	Memorization?	
	Yes	No

FLUENCY

Addition

Subtraction

Multiplication

Division

FLUENCY

Addition

Subtraction

Multiplication

Division

FLUENCY

Strategies for Building Fluency

What are your strengths?

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What are your plans for next Monday?
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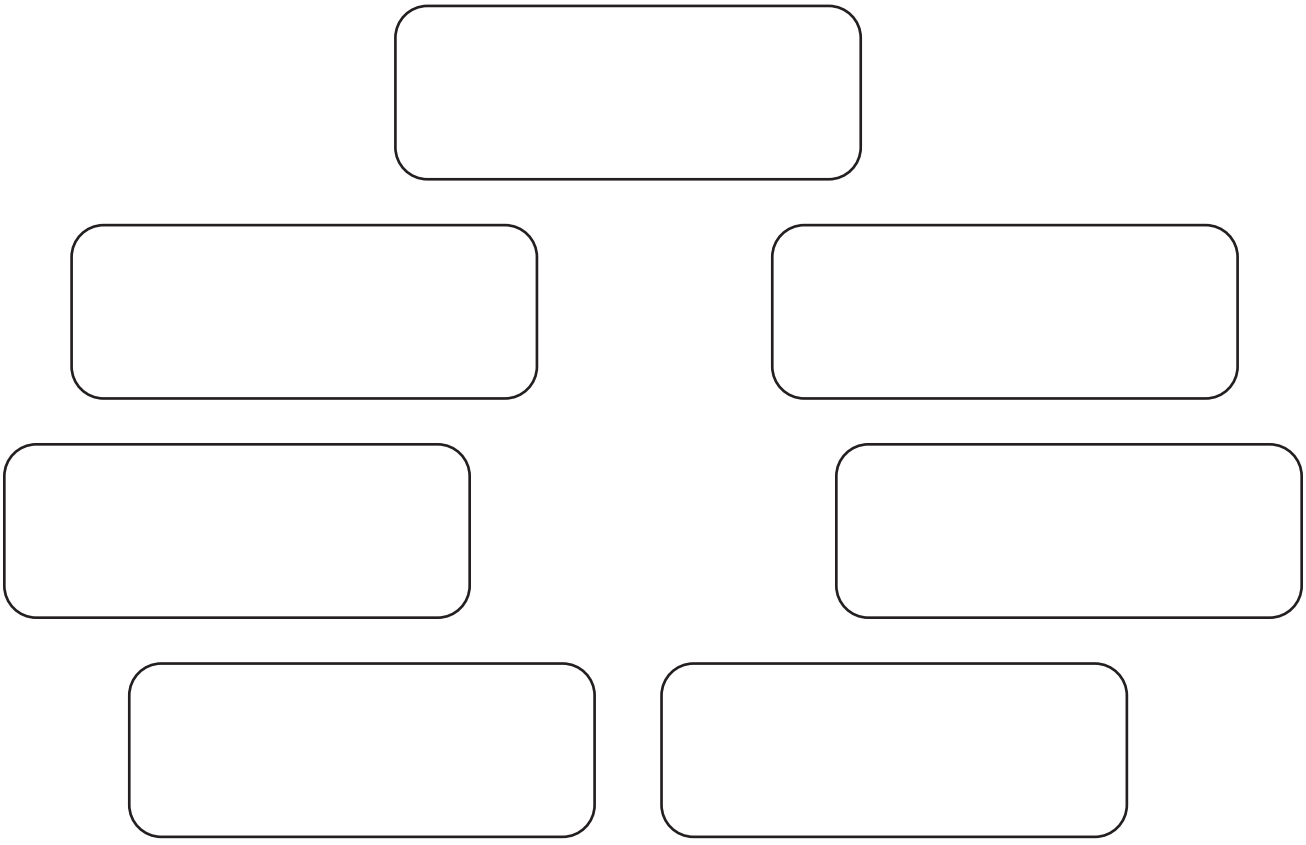
Next year?

WORD PROBLEMS

Research and Information



WORD PROBLEMS

Attack Strategies

SOLVE

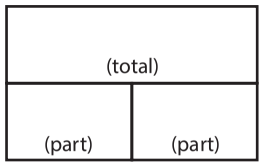
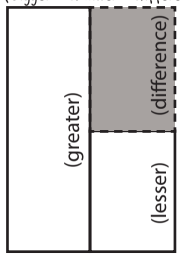
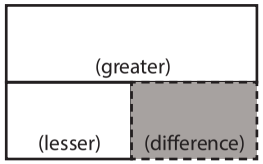
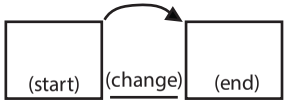
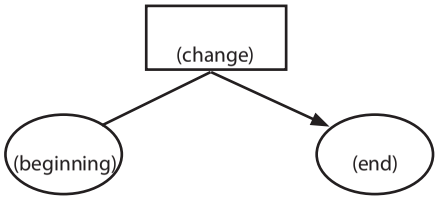
Study the problem
Organize the information
Line up a plan
Verify the plan
Examine the answer

R-CUBES

Read the problem
Circle key numbers
Underline the question
Box action words
Evaluate steps
Solve and check

UPS Check

Understand
Plan
Solve
Check

Schema and Definition	Equations and Graphic Organizers	Examples			Variations
Total (Combine; Part-part-whole) Parts combined for a sum	P1 + P2 = T (part + part = total)  	Sum unknown: Lyle has 11 red apples and 18 green apples. How many apples does Lyle have altogether?	Part unknown: Lyle has 29 red and green apples. If 11 of the apples are red, how many green apples does Lyle have?		More than two parts: Lyle has 34 apples. Of the apples, 11 are red, 18 are green, and the rest are yellow. How many yellow apples does Lyle have?
Difference (Compare) Sets compared for a difference	B - s = D (bigger - smaller = difference)  G - L = D (greater - less = difference)  	Difference unknown: Sasha wrote 85 words in her essay, and Tabitha wrote 110 words. How many fewer words did Sasha write than Tabitha?	Bigger/greater unknown: Tabitha wrote 25 more words than Sasha. If Sasha wrote 85 words, how many words did Tabitha write?	Smaller/lesser unknown: Tabitha wrote 110 words in her essay. Sasha wrote 25 words fewer than Tabitha. How many words did Sasha write?	(None)
Change (Join; Separate) An amount that increases or decreases	ST +/- C = E (start +/- change = end)   	End (increase) unknown: Jorge had $52. Then, he earned $16 babysitting. How much money does Jorge have now?	Change (increase) unknown: Jorge had $52. Then, he earned some money babysitting. Now, Jorge has $68. How much did Jorge earn babysitting?	Start (increase) unknown: Jorge has some money, and then he earned $16 for babysitting. Now, Jorge has $68. How much money did he have to start with?	Multiple changes: Jorge had $78. He stopped and bought a pair of shoes for $42 and then he spent $12 at the grocery. How much money does Jorge have now?
		End (decrease) unknown: Jorge had $52. Then, he spent $29 at the ballpark. How much money does Jorge have now?	Change (decrease) unknown: Jorge had $52 but spent some money when he went to the ballpark. Now, Jorge has $23. How much did Jorge spend at the ballpark?	Start (decrease) unknown: Jorge had some money. Then, he spent $29 at the ballpark and has $23 left. How much money did Jorge have before going to the ballpark?	

Powell & Fuchs (2018).
Material collected from: Griffin & Jitendra, 2009; Fuchs et al., 2014; Fuchs, Seethaler, et al., 2008; Fuchs et al., 2010; Jitendra, 2002; Kintsch & Greeno, 1985; Van de Walle, Karp, & Bay-Williams, 2013.

WORD PROBLEMS: TOTAL

A.
An artist poured 6.09 kilograms of orange sand and 14.26 kilograms of blue sand into a mixing container for a project. What was the total amount of sand the artist poured into the container in kilograms?

B.
A movie theater has 710 seats.
- 158 seats are red.
- 247 seats are black.
- 119 seats are yellow.
- The rest of the seats are green.

How many seats are green?

C.
The frequency table shows the number of visitors a park had on three different days.

Park Visitors

Day	Number of Visitors
Friday	𝍸 𝍸 |||
Saturday	𝍸 𝍸 𝍸 𝍸 𝍸 |
Sunday	𝍸 𝍸 𝍸 ||

What was the total number of visitors the park had over those three days?

Your TOTAL problem:

WORD PROBLEMS: DIFFERENCE

D.
There are two lions at a zoo. The weight of the younger lion is 379 pounds. The weight of the older lion is 514 pounds. What is the difference in pounds between these two weights?

E.
The frequency table shows the number of movies watched last month by each student in Mr. Westley's class.

Movies Watched Last Month

Number of Movies	Number of Students
1	𝍸 ||
2	𝍸 𝍸 ||
3	||||
4	||

What is the difference between the number of students who watched 2 movies last month and the number of students who watched one movie last month?

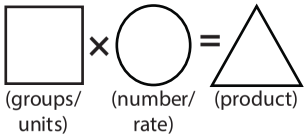
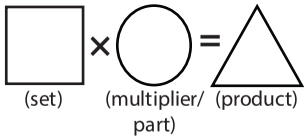
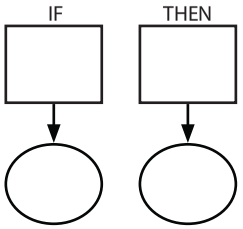
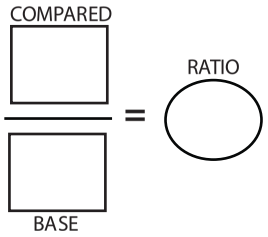
F.
Samantha, Gordon, and Diego each brought an ice chest to a picnic.
- The weight of Samantha's ice chest was 83 pounds.
- The weight of Gordon's ice chest was 28 pounds.
- The weight of Diego's ice chest was 37 pounds.

What was the difference in pounds between the weight of Samantha's ice chest and the combined weight of Gordon's and Diego's ice chests?

Your DIFFERENCE problem:

WORD PROBLEMS: CHANGE

G. Landon had one string that was 10 meters long. He used 6.275 meters of this string for a project. What was the length of string in meters that Landon had left?	H. A parade began at 11:30 a.m. and ended at 2:18 p.m. How long did the parade last?
I. Ms. Fitzgerald had gallons of fruit punch. She served gallon of the fruit punch to her family at lunch. How many gallons of fruit punch did Ms. Fitzgerald have left after lunch?	Your CHANGE problem:

Schema and Definition	Graphic Organizers	Examples			Variations
Equal Groups (Vary) A number of equal sets or units	GR x N = P  	Product unknown: Maria bought 5 cartons of eggs with 12 eggs in each carton. How many eggs did Maria buy?	Groups unknown: Maria bought 60 eggs. The eggs were sold in cartons with 12 eggs each. How many cartons of eggs did Maria buy?	Number unknown: Maria bought 5 cartons of eggs for a total of 60 eggs. How many eggs were in each carton?	With rate: Maria bought 5 cartons of eggs. Each carton cost $2.95. How much did Maria spend on eggs?
Comparison One set as a multiple or part of another set	S x T = P  	Product unknown: Malik picked 7 flowers. Danica picked 3 times as many flowers. How many flowers did Danica pick?	Set unknown: Danica picked 3 times as many flowers as Malik. If Danica picked 21 flowers, how many flowers did Malik pick?	Times unknown: Malik picked 7 flowers. Danica picked 21 flowers. How many times more flowers did Danica pick?	With fraction: Malik picked 25 red and yellow flowers. If 1/5 of the flowers were yellow, how many were red?
Ratios/ Proportions (Percentages; Unit Rate) Relationships among quantities	 	Subject unknown: Sally typed 56 words in 2 minutes. How many words could Sally type in 7 minutes?	Object unknown: Sally typed 56 words in 2 minutes. How many minutes would it take Sally to type 192 words?		With percentage: Watson received an 80% on his science quiz. If the test had 40 questions, how many questions did Watson answer correctly?
Ratio	 	Base unknown: Justin baked cookies and brownies. The ratio of cookies to brownies was 3:5. If he baked 15 cookies, how many brownies did he bake?	Compared unknown: Justin baked cookies and brownies. The ratio of cookies to brownies was 3:5. If he baked 25 brownies, how many cookies did he bake?	Ratio unknown: Justin baked 15 cookies and 25 brownies. What's the ratio of cookies to brownies?	With unit rate: Paula bought 5 boxes of markers. She spent $9.75. What is the price of one box of markers?

Material collected from: Jitendra, DiPipi, & Perron-Jones, 2002; Jitendra & Star, 2011; Jitendra et al., 2009; Van de Walle et al., 2013; Xin, Jitendra, & Deatline-Buchman, 2005; Xin & Zhang, 2009.

WORD PROBLEMS: EQUAL GROUPS

J.
There are 4 erasers on each table in a classroom. There are 5 tables in the classroom. What is the total number of erasers on all of the tables in this classroom?

K.
Carmine has 291 balloons. She put the same number of balloons into 3 groups. What is the best estimate of the number of balloons in each group?
A. 90
B. 100
C. 75
D. 85

L.
Kelsi spends $6.75 every Saturday for breakfast. What is the total amount of money Kelsi spends on breakfast for 14 Saturdays?

Your EQUAL GROUPS problem:

WORD PROBLEMS: COMPARISON

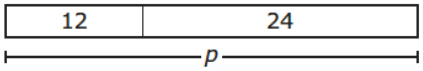
M.
Jonathan and Elizabeth are comparing the masses of their rocks.
•Jonathan's rock has a mass of 0.2 kilogram.
•Elizabeth's rock has a mass 8 times the mass of Jonathan's rock.

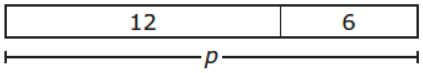
What is the mass of Elizabeth's rock in kilograms??

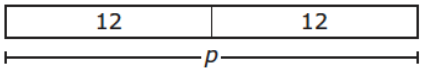
N.
Haruko did 9 sit-ups in P.E. class. The number of sit-ups Tom did can be represented by this expression. 2 × 9

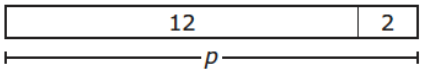
Which statement is true?
F. Tom did 2 times as many sit-ups as Haruko.
G. Haruko did 2 times as many sit-ups as Tom.
H. Tom did 2 more sit-ups than Haruko.
J. Haruko did 2 more sit-ups than Tom.

O.
Erin has 12 pictures from a field trip and some pictures from a vacation. She has twice as many pictures from the vacation as from the field trip. Which strip diagram represents p, the total number of pictures Erin has?

F


G


H


J


Your COMPARISON problem:

WORD PROBLEMS: RATIO or PROPORTION

P. Dennis made an extra $245.00 for selling furniture. The extra $245.00 was 7% of the total value of the furniture he sold. What was the total value of the furniture Dennis sold?	Q. A baseball traveled 330 feet in 5 seconds. Which rate is equivalent to the rate at which the baseball traveled? A. 55 feet per second B. 66 feet per second C. 55 seconds per foot D. 66 seconds per foot
R. During a 90-minute school play, the main character was on stage 80% of the time. What amount of time in minutes was the main character on stage?	Your RATIO or PROPORTION problem

WORD PROBLEMS: MULTI-STEP

S.
Shay bought 4 packs of markers for $6 each and a box of colored chalk for $11. What was the total cost of the markers and chalk Shay bought?

T.
Rajesh bought 2 salads for $3.65 each and a sandwich for $4.35. He gave the clerk $15.00 to pay for the items. How much change should Rajesh have received in dollars and cents?

U.
Members of the chess club held a bake sale to raise money. Cupcakes and cookies were sold.
- Cupcakes were sold for $1 each.
- Cookies were sold for $0.50 each.
- The members sold a total of 288 items.
23
- Of the items sold, were cupcakes and the remaining items were cookies.

How much money did the chess club members raise from the cookies that were sold?

V.
Alex bought 4 packages of pink golf balls and 2 packages of orange golf balls. There were 12 golf balls in each package. How many golf balls did Alex buy?

WORD PROBLEMS

What are your strengths?

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