What's the Story? Analyzing Practical Problems

STRAND: Computation and Estimation

STRAND CONCEPT: Practical Applications- Rational Numbers and Proportional Reasoning

SOL 5.4, 6.6b, 7.2

Remediation Plan Summary

Students practice identifying appropriate strategies to solve problems. There are separate attachments for whole numbers, decimals and fractions.

Common Errors and Misconceptions

- Students have a difficult time understanding what math operation to use when solving practical problems and may use the wrong operations when solving.
- Students may not realize that all numbers in a practical problem are not always needed for solving the problem.

Materials

- What Do YOU Think? recording sheet
- What's the Story? recording sheets
- Reflection exit slip
- Calculators

Introductory Activity

- Have students complete the "What Do YOU Think?" worksheet. Explain to students that they are explaining what the operations mean not "key words" that they might see in practical problems. Once they are done, ask the students to share their responses with a partner. Encourage discussion about the similarities and differences in their responses. Then, have a class discussion about student responses.

Plan for Instruction

1. Ask students how thinking about the *meaning* of addition can help when solving word problems. Give students a chance to explain individually and share their thoughts with each other. Repeat this process for subtraction, multiplication, and division. Have students explain the action of the word not stating key words.

2. Ask students what different strategies are used to solve practical problems. List their answers, and keep these strategies on display throughout the lesson. Ask whether they are more comfortable using certain strategies then others. If they answer yes, ask them to explain.

3. Distribute the "What's the Story?" worksheets, either the whole number, decimal, fraction or all, and review the directions. Also emphasize the importance of explaining solutions thoroughly when asked to do so. Encourage students to annotate as they read each problem

4. Have students complete the worksheets, offering assistance as needed. Their responses will help highlight misunderstandings or errors.
5. Once students are finished, review answers with the class. Clear up any errors or confusion.
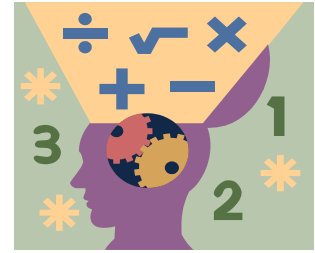
Pulling It All Together (Reflection)

Have students complete the "Reflection" exit slip. Use one or all of the questions depending on what attachments you have students complete.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Virginia Department of Education 2018

Name:

What Do YOU Think?

1. In your own words, write what it means to add.

_____

_____

2. In your own words, write what it means to subtract.

_____

_____

3. In your own words, write what it means to multiply.

_____

_____

4. In your own words, write what it means to divide.

_____

_____

Name: _____

What's the Story 1?

Story 1: Read the story carefully **two times** before answering the questions.

A Day of Theater

The Martinez family is traveling to a play in Richmond.
- A round trip train ticket costs $8.00. Children under the age of 7 travel for half price.
- Tickets for the play are $14.00 for an adult and $6.00 for a child.

Mr. and Mrs. Martinez will go with their children, Ricky, Ramona, and Thomas.
- Ricky and Ramona are 12 years old.
- Thomas is 6 years old.

How much did the Martinez family spend for the train ride and play tickets?

1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How much will it cost the entire Martinez family to take travel to and from the play?

4. How much will tickets cost for the entire Martinez family?

5. What was the total spent by the Martinez family for travel and tickets? Did breaking apart the problem help? Why or why not?

6. A class of children is also going to the play. The total spent on tickets for the students and one teacher is $158. How many students are in the class? Explain your solution.

Name: _____

What's the Story 2?

Story 2: Read the story carefully **two times** before answering the questions.

A Camping Trip

Scouting Troop A is going on a hike.
- There are 8 scouts and 2 adults on the trip, each with a backpack.
- Each adult weighs about 160 pounds.
- Each scout weighs about 100 pounds.
- Each backpack weighs about 20 pounds.

The troop will use small boats to cross a river. Each boat can hold up to 360 pounds. How many boats will it take for Scouting Troop A to cross the river?

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1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How will you determine the total weight?

4. How many boats will it take for Scouting Troop A to cross the river?

What's the Story 3?

Story 3: Read the story carefully **two times** before answering the questions.

Summer Walking

Tracey set a goal for walking. She planned to walk 50 miles in 4 weeks. She recorded her plan as follow.
- 1.75 miles every Monday, Tuesday, and Thursday,
- 3.1 miles every Wednesday,
- 2 miles every Saturday,
- and rest Fridays and Sundays.

If Tracey follows this plan, will she meet her goal?

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1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How would you determine the total number of miles?

4. Did she meet her goal?

What's the Story 4?

Story 4: Read the story carefully **two times** before answering the questions.

> **Motorized Skate Board**
> Mike earns $52.50 per week cutting grass during the summer and $14.25 per week walking dogs. He wants to buy a motorized skate board. If the motorized skate board cost $439 including tax, how many weeks will Mike have to work to have enough money to buy it?

1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. Mike worked _____ weeks.

Name: _____

What's the Story 5?

Story 5: Read the story carefully **two times** before answering the questions.

In the Library

In the children's section of a library there are six book shelves of fiction and nonfiction books. On each of these shelves, there are 72 books. If $\frac{1}{3}$ of the books are non-fiction, how many fiction books are there?

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1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How would you determine the total number of books?

4. How would you determine the amount of books that were non-fiction?

5. Did question 4 give you the answer? Explain

What's the Story 6 & 7?

Story 6: Read the story carefully **two times** before answering the questions.

Pep Rally

Friday is the big pep rally at your school. You are allowed to dress up and show your spirit. You decide to dye your hair various colors for the pep rally. If you dye $\frac{1}{2}$ of your hair blue, $\frac{1}{8}$ of it silver, and $\frac{1}{4}$ of it white, How much of your original hair color is left?

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1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How much of your original hair color is left?

Story 7: Read the story carefully **two times** before answering the questions.

Spirit Day

Brandon is creating a kennel out of fencing for his dog Bailey. He wants the length of the kennel to be $4\frac{1}{3}$ yards and the width to be $5\frac{3}{4}$ yards. How much fencing will Brandon need to buy to go around the kennel?

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1. What is the question asking you to find?

2. What strategy will you use to solve the problem?

3. How much fencing will Brandon need to buy to go around the kennel?

Name: _____

Reflection

1. Write one practical problem involving either addition or subtraction in which the answer is 4.

3. Write one practical problem involving either multiplication or division in which the answer is 4.6.

4. Write a multistep practical problem in which the answer is $1\frac{1}{2}$.