

Practical Problems – Defining the Operations

STRAND: Computation and Estimation

STRAND CONCEPT: Practical Applications- Rational Numbers and Proportional Reasoning

SOL 5.4

Remediation Plan Summary

Students practice identifying appropriate strategies to solve problems with whole numbers.

Common 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 word problem are not always needed for solving the problem.

Materials

- What Do YOU Think? recording sheet
- What's the Story? recording sheet
- 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 word problems. Using key words is not a recommended strategy for students when solving 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 word problems. List their answers, and keep these strategies on display throughout the lesson. Ask whether they are more comfortable using certain strategies than others. If they answer yes, ask them to explain.
3. Distribute the “What's the Story?” worksheets, and review the directions, noting that there is a combination of multiple-choice and free response problems. Also emphasize the importance of explaining solutions thoroughly when asked to do so.
4. Have students complete the worksheets, offering assistance as needed while they work. Their responses will help highlight misunderstandings or errors. You may want to work on

AR Remediation Plan – Practical Applications – Rational Numbers and Proportional Reasoning

the theater problem one day and the camping problem the next, depending on the time available.

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. You may want to collect, check, and return these to give individual feedback to students.

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?

Story 1: Read the story carefully. Then, read each question, and consider all choices before choosing a solution.

A Day of Theater

The Martinez family is going to a play in Richmond. A round trip train ticket costs \$8.00. Children under 7 years old travel for half price. The bus from the train station to the theater costs \$2.00 per person each way. Tickets for the play are \$14.00 for an adult and \$6.00 for a child.

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

1. How much will it cost the entire Martinez family to take the train to Richmond and back?
Show your work
3. A class of children is also going to the play. It spends \$158 on tickets for the students and the teacher. How many students are in the class? Explain your solution.
4. What would be the *entire* cost of the trip for 12 students if 5 of the students are younger than 7 years old? Explain your solution.

Name: _____

What's the Story?

Story 2: Read the story carefully. Then, read each question, and consider all choices before choosing a solution.

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 is getting ready to cross a river in a small boat. The boat can hold up to 360 pounds without sinking.

1. The boat will be filled to its limit by

2. The weight of 1 adult is equal to

3. What weighs the same as 3 scouts and 1 backpack?

4. What is the combined weight of all scouts, adults, and backpacks? Explain your solution.

Name: _____

Reflection

1. Write one word problem involving addition in which the answer is 4.

2. Write one word problem involving subtraction in which the answer is 6.

3. Write one word problem involving multiplication in which the answer is 16.

4. Write one word problem involving division in which the answer is 5.