Just In Time Quick Check

Standard of Learning (SOL) 5.5b

Strand: Computation and Estimation

Standard of Learning (SOL) 5.5b

The student will create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication of decimals, and create and solve single-step practical problems involving division of decimals.

Grade Level Skills:

- Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication of decimals.
- Create and solve single-step practical problems involving division of decimals.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Algebra Readiness Remediation Plans
  - Problem Solving Finding the Hidden Question (Word) / PDF
- VDOE Algebra Readiness Formative Assessments
  - SOL 5.5b (Word) / PDF
- VDOE Word Wall Cards: Grade 5
  - Decimal Place Value Position
  - Round
  - Addition
  - Subtraction
  - Multiply
  - Divide
- VDOE Rich Mathematical Tasks: Name of on-grade-level Task
  - 5.5b Room for Shoes Task Template (Word) / PDF Version
  - 5.5b Room for Shoes Student Version of Task (Word) / PDF Version
  - 5.5b Room for Shoes Anchor Papers (Word) / PDF Version
  - 5.5b Room for Shoes Anchor Papers Scoring Rationales (Word) / PDF Version
- VDOE DESMOS Activity
  - Decimal Contexts and Models

Supporting and Prerequisite SOL: 5.4, 5.5a, 4.6a, 4.6b, 3.4a, 3.4b, 3.4d

SOL 5.5b - Just in Time Quick Check

1. A relay race covers a distance of 8.4 miles. Each team member is expected to run 1.2 miles. How many runners will be needed to cover the complete distance?

2. In January, it snowed 36.45 inches. In December it snowed 19.7 inches. How many more inches did it snow in January than in December?

3. Over the summer, Audrey had a job and earned $528. She spent $125.70 on a new bike and $85.09 for some new clothes. How much money does Audrey have left?

4. Conner's dog weighs 16.2 pounds. Melissa's dog weighs 2.5 times as much as Conner's dog. What is the combined weight of both dogs?

5. Emily is babysitting this summer and she gets paid $8.50 per hour. Emily babysat 5 hours last week and 6.5 hours this week. She spends $24.95 on a new shirt. How much money does Emily have left?

SOL 5.5b - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. A relay race covers a distance of 8.4 miles. Each team member is expected to run 1.2 miles. How many runners will be needed to cover the complete distance?

   Some students have difficulty determining which operation to use to solve the problem. Encouraging students to draw a picture to represent the problem can be helpful. A number line model would be particularly helpful to represent each runner's portion of the race.

   There are multiple ways to solve this problem. Some students may see it as repeated addition, continually adding 1.2 miles until it reaches the desired total distance. Other students may continually subtract from the total distance until they have the total distance covered. Still other students may decide to choose estimated numbers to multiply by the 1.2 miles in order to find the total amount of team members needed, using guess and check and adjusting.

   All of these methods lead to a correct answer. A possible strategy to give students a chance to see other methods of solving this question would be to allow them to work independently to solve the problem and then share solution strategies. Discussion about how they are all related would be a rich mathematical discussion.

2. In January, it snowed 36.45 inches. In December it snowed 19.7 inches. How many more inches did it snow in January than in December?

   A common misconception for students in this type of problem is that they see the word "more" and often see it used as a key word in an addition problem. Many key words can be confusing when not used in a way students have associated with a specific operation. Teachers are discouraged in teaching key word strategies to students. Instead, focusing on the structure or the problem, or the problem type, would be more beneficial. Refer to the Grade 3 Curriculum Framework for addition and subtraction problem types, and the Grade 4 Curriculum Framework for multiplication and division problem types.

   Additionally, students may draw a picture to help them solve this problem. This may lead to the discovery that this problem could be solved by subtracting, or by adding up.

   January snow ——————————————————

   December snow ——————————  —— **(missing value)**

3. Over the summer, Audrey had a job and earned $528. She spent $125.70 on a new bike and $85.09 for some new clothes. How much money does Audrey have left?

   This problem has multiple steps. Some students may get the incorrect answer for multiple step problems because they complete one step and think they are finished. As with many problems, there are multiple ways to solve this problem. Students can find the total spent and then subtract it from the total earned. Other students may subtract one purchase at a time from the original amount. Either method works, if they complete all the necessary steps.

   Some students will subtract one of the numbers instead of both. If a student does not have a good grasp of the meaning of spending money, he/she may add the numbers to the total instead of subtracting. Sometimes using whole numbers with struggling students will help. If they consider a simple example, such as, "I have $10. I bought a pizza for $5 and a drink for $1. How much money do I have left?" they can usually make sense of it without being intimidated with more complex numbers.

4. Conner's dog weighs 16.2 pounds. Melissa's dog weighs 2.5 times as much as Conner's dog. What is the combined weight of both dogs?

   Some students may find the product of 16.2 and 2.5 and think that is the answer, which is correct if they are looking for the weight of Melissa's dog, but they are looking for the combined weight of both dogs. This happens often when there are multiple steps to a question. Using an underline tool may help students focus on the necessary information, as well as encouraging them to read the question again to see if they are answering the question that is being asked.

5. Emily is babysitting this summer and she gets paid $8.50 per hour. Emily babysat 5 hours last week and 6.5 hours this week. She spends $24.95 on a new shirt. How much money does Emily have left?

   Some students may have difficulty with this problem because it is a multi-step problem containing multiple operations. Encourage students to break down the problem, draw a chart to represent the situation, or use manipulatives. Additionally, providing the same scenario with whole numbers may be a scaffold that could support students in understanding each step of the problem.

   It is important, especially for struggling students, to encourage them to use a consistent problem solving strategy every time they solve a word problem. One example of such a strategy is "UPS Check" which is the acronym for understand, plan, solve, check. Utilizing graphic organizers to support their problem solving strategy can be beneficial as well.