

Just In Time Quick Check
Standard of Learning (SOL) 5.4

Strand: Computation and Estimation

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

Grade Level Skills:

- Create single-step and multistep practical problems involving addition, subtraction, multiplication, and division of whole numbers, with and without remainders.
- Estimate the sum, difference, product, and quotient of whole numbers.
- Apply strategies, including place value and application of the properties of addition and multiplication, to solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of whole numbers, with and without remainders, in which:
 - sums, differences, and products do not exceed five digits;
 - factors do not exceed two digits by three digits;
 - divisors do not exceed two digits; or
 - dividends do not exceed four digits.
- Use the context of a practical problem to interpret the quotient and remainder.

[Just in Time Quick Check](#)

[Just in Time Quick Check Teacher Notes](#)

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [5.4 - Take a Trip: Computation and Estimation with Whole Numbers](#) (Word) / [PDF Version](#)
- VDOE Co-Teaching Mathematics Instruction Plans (MIPS)
 - [5.4 - Multi-Step Practical Problems](#) (Word) / [PDF Version](#)
- VDOE Word Wall Cards: Grade 5 ([Word](#)) | ([PDF](#))
 - Addition
 - Subtraction
 - Multiply: Product
 - Divide: Quotient

Supporting and Prerequisite SOL: [4.4a](#), [4.4b](#), [4.4c](#), [4.4d](#), [3.3a](#), [3.3b](#), [3.4a](#), [3.4b](#), [3.4c](#), [3.4d](#)

SOL 5.4 - Just in Time Quick Check

1. Marcus has 32 baseball cards. Gary has 4 times as many baseball cards as Marcus. How many baseball cards does Gary have?
2. Ten children will share a bag of candy consisting of 78 pieces. Each child will receive the same number of pieces. What is the greatest number of pieces of candy each child can receive?
3. Each of the 148 students in a school band raised \$61 for their school band program. About how much money in total did the students raise? Explain your answer.
4. Students are attending a summer camp. Students must sign up for a canoe class or a hiking class on the second day of camp.
 - There are 126 students at the summer camp.
 - There are 84 students going hiking.
 - The students taking the canoe class will be put into 14 equal groups.How many students will be in each group in the canoe class?
5. Susan made 6 batches of cupcakes. Each batch contained 12 cupcakes. She wants to pack the cupcakes into boxes with no more than 4 cupcakes per box. What is the fewest number of boxes Susan will need to pack all of the cupcakes?
6. Kristin rides her bike for 15 minutes, runs for 25 minutes, and walks for 20 minutes each day. How many total minutes will Kristin ride her bike and walk in 7 days?

SOL 5.4 - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. Marcus has 32 baseball cards. Gary has 4 times as many baseball cards as Marcus. How many baseball cards does Gary have?

Some students may misread the information and make the error of thinking Marcus has the most cards because they see 32 associated with Marcus' name and 4 associated with Gary's name. In this case, students may divide 32 by 4 to obtain 8 cards for Gary. This might indicate a need to emphasize mathematical vocabulary and transposing verbal information. Students may also misinterpret a mathematical operation. Instead of multiplying 32 by 4, the student adds four more to 32 so Gary would have 36 cards. This indicates that a student believes four times as many means to add four to the total.

Both of these errors may indicate that the students need to develop more conceptual understanding of the meaning of multiplication and division, as well as more experiences with the associated problem types. Refer to the [Grade 5 Curriculum Framework](#) for a description of problem types.

2. Ten children will share a bag of candy consisting of 78 pieces. Every child will receive the same number of pieces. What is the greatest number of pieces of candy each child can receive?

A student may calculate an exact answer and obtain 7.8 pieces of candy for each child. Some students may round up to the nearest whole number to obtain an answer of 8 rather than thinking about the context of the situation. These students may believe that each child will receive 8 pieces of candy. Encourage students to check their answer by multiplying number of pieces of candy by number of children.

A student may have difficulty interpreting the remainder in the context of the situation. Provide students with examples of other situations where the remainder would be interpreted differently. Refer to [Grade 4 Curriculum Framework](#) for examples.

3. Each of the 148 students in a school band raised \$61 for their school band program. About how much money in total did the students raise? Explain your answer.

The explanation provided by students will reveal the most common misconceptions for estimation. Some students may round 148 to 100, which would significantly underestimate the money raised. Other students may round \$61 to \$100, which would significantly overestimate the money raised. Students may need more experiences with estimation strategies that will reveal reasonable answers for the context of the situation.

4. Students are attending a summer camp. Students must sign up for a canoe class or a hiking class on the second day of camp.

- There are 126 students at the summer camp.
- There are 84 students going hiking.
- The students taking the canoe class will be put into 14 equal groups.

How many students will be in each group in the canoe class?

Some students may not subtract the number of students going hiking from the total number of students at the camp obtaining 9 people per group.

Other students may add the total number of students and those that are going hiking, and then divide by 14 to obtain 15 as the total number of students per group.

These errors might indicate that a student struggles with context involving multiple steps with two distinct operations. This student may need more experience with single step problems.

Completing the initial step only and determining the total number of students taking the canoe class and not dividing by 14 may also be a common error. This might indicate that a student struggles with reading comprehension. Encourage student to reread the question to determine if the answer addresses the question being asked.

5. Susan made 6 batches of cupcakes. Each batch contained 12 cupcakes. She wants to pack the cupcakes into boxes with no more than 4 cupcakes per box. What is the fewest number of boxes Susan will need to pack all of the cupcakes?

Some students may misinterpret the practical problem and believe it only involves multiplication, instead of multiplication and division. This might indicate that these students can correctly identify the initial operation to be applied but thinks this operation must continue throughout the problem.

Adding the number of batches and the number of cupcakes per batch and then dividing by the number of cupcakes per box might indicate that a student needs additional support synthesizing the context of a practical problem. Encourage the student to use manipulatives or draw a picture for the situation.

6. Kristin rides her bike for 15 minutes, runs for 25 minutes, and walks for 20 minutes each day. How many total minutes will Kristin ride her bike and walk in 7 days?

Some students may include all three given numbers in their calculations. Using all three activities might indicate that a student is reading too quickly and not comprehending that only biking and walking are used to find the answer. Other students may calculate the total number of minutes correctly for biking and walking, but may neglect to multiply by 7 days. Encourage students to reread the question to determine if the answer addresses the question asked.