

Just In Time Quick Check
Standard of Learning (SOL) 4.4d

Strand: Computation and Estimation

Standard of Learning (SOL) 4.4d

Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication, and single-step practical problems involving division with whole numbers.

Grade Level Skills:

- Create and solving single-step and multistep practical problems involving addition, subtractions, and multiplication with whole numbers.
- Create and solve single-step practical problems involving division with whole numbers.
- Use the context in which a practical problem is situate 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)
 - [4.4d – Shopping for Thanksgiving Lunch: Computation](#) (Word)/[PDF Version](#)
- VDOE Word Wall Cards: Grade 4 ([Word](#) and [PDF Version](#))
 - Addition
 - Subtraction
 - Multiply: Product
 - Divide: Quotient
 - Multiplication: Number Line Model
 - Division: Number Line Model

Supporting and Prerequisite SOL: [4.4a](#), [4.4b](#), [4.4c](#), [3.3a](#), [3.3b](#), [3.4a](#), [3.4b](#), [3.4c](#), [3.4d](#), [2.5a](#), [2.6a](#), [2.6b](#), [2.6c](#)

SOL 4.4d - Just in Time Quick Check

- 1) Each morning the baker prepares 144 cookies to sell in the bakery. If the baker places exactly 5 cookies in each bag, then how many cookies will the baker have left over?
- 2) The chart below shows the type and number of school supplies that a teacher ordered for class. Using the information from the chart, create and solve a word problem.

School Supplies

| School Supplies | Number of Boxes Purchased | Number of Items in Each Box |
|-----------------|---------------------------|-----------------------------|
| Crayons | 25 | 12 |
| Pencils | 12 | 18 |
| Markers | 27 | 8 |

- 3) Jacob and Emma both collect baseball cards. Jacob has 84 baseball cards in his collection. If Jacob has four times the number of baseball cards as Emma, then how many baseball cards does Emma have in her collection?
- 4) Mr. King bought 48 balloons for a birthday party. He gave 3 balloons to each of the 14 guests that attended the party. How many balloons did Mr. King have left?

- 5) The fourth grade teachers are planning a trip to a theater.
- There are a total of 132 students and teachers going on the trip.
 - The theater can only seat 8 people in each row.

How many rows should the teachers reserve so that every student and teacher will have a seat?

- 6) The baseball team was scheduled to play three baseball games at the stadium. The table below shows the number of people that attended the game each day.

Baseball Game Attendance

| Game Day | Number of People |
|----------|------------------|
| Friday | 28,317 |
| Saturday | 30,023 |
| Sunday | ? |

If the baseball stadium had a total of 87,134 people that attended the baseball game during those three days, then how many people attended the game on Sunday?

SOL 4.4d - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

- 1) Each morning the baker prepares 144 cookies to sell in the bakery. If the baker places exactly 5 cookies in each bag, then how many cookies will the baker have left over?

A common misconception for some students is not understanding how to approach the problem. Students would benefit from exposure to a variety of problem types in which they must interpret the quotient and remainder based on the story problem. The Grade 4 Curriculum Framework has a chart that includes examples of common multiplication and division problem types.

Another common misconception for some students is to assume that the quotient is the answer instead of identifying that the remainder represents the number of cookies that the baker will have left over. It is important for students to identify and represent each number in the division problem. For example in this particular problem, the dividend represents the total number of cookies that were baked, the divisor represents the number of cookies in each bag, the quotient represents the total number of bags created with exactly 5 cookies, and the remainder represents the number of cookies that are left over. If students are unable to interpret the quotient or remainder, then these students will need additional support using manipulatives to model this problem. Using base ten blocks or counters may be necessary for students to comprehend and understand the question.

- 2) The chart below shows the type and number of school supplies that a teacher ordered for class. Using the information from the chart, create and solve a word problem.

School Supplies

| School Supplies | Number of Boxes Purchased | Number of Items in Each Box |
|-----------------|---------------------------|-----------------------------|
| Crayons | 25 | 12 |
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When students create word problems it allows for creativity and will help them to understand the process in which we use to solve problems. Some students will create a single step problem, while other students may create a multistep word problem. Teachers may also notice that some students may create word problems that are more complex and of a higher level thinking than others. Allowing time for students to explore information, to wonder what could be the question, and to notice important information, will help them to develop a deeper understanding of word problems, and how to solve them.

A common misconception for students is to not fully understand the concept of multiplication and they will create word problems that reflect addition. If a student is unable to create a word problem with the information provided, then these students will need additional support creating word problems by collaborating and sharing ideas with others. Using models and pictorial representations will help students model their thinking and create a word problem.

- 3) Jacob and Emma both collect baseball cards. Jacob has 84 baseball cards in his collection. If Jacob has four times the number of baseball cards as Emma, then how many baseball cards does Emma have in her collection?

A common misconception for students is to focus on key words rather than placing an emphasis on thinking and reasoning. Some students may read the phrase “four times” and choose to multiply the numbers together to determine the amount of cards Emma has. If students think the answer is 336, then these students would benefit from using concrete models such as base ten blocks, counters, or a pictorial representation such as a bar model to model this multiplicative comparison problem. Teachers may wish to refer to the Grade 4 Curriculum Framework in order to provide students with additional examples of multiplication problem types.

- 4) Mr. King bought 48 balloons for a birthday party. He gave 3 balloons to each of the 14 guests that attended the party. How many balloons did Mr. King have left?

When solving problems students should be encouraged to focus on thinking and reasoning rather than on key words. Some students may subtract 14 and 3 thinking that there were 11 balloons left. Students may use several different strategies when solving this problem. Some students may multiply 14×3 to determine the number of balloons given to each guest and then subtract that amount from 48. Other students may use repeated subtraction and subtract 3 from 48 fourteen times. Regardless of the strategy used, students should be encouraged to share their approach to the problem. Teachers may use this opportunity to connect the students’ strategies and illustrate the relationship between operations. If students are unable to determine the number of balloons remaining, these students would benefit from experience with concrete models or pictorial representations.

- 5) The fourth grade teachers are planning a trip to a theater.

- There are a total of 132 students and teachers going on the trip.
- The theater can only seat 8 people in each row.

How many rows should the teachers reserve so that every student and teacher will have a seat?

A common misconception when solving division word problems is not making sense of the remainder. If students have an answer of 16, the students divided correctly, but ignored the remainder. Sometimes the remainder is not needed and can be left over (or discarded). In this particular problem, the remainder forces the answer to be increased to the next whole number. These students would benefit from exposure to various types of practical problems in which they must interpret the quotient and remainder based on the context of the problem. The Grade 4 Curriculum Framework has a chart that includes examples of making sense of the remainder in division.

- 6) The baseball team played three games at the stadium. This table shows the number of people that attended the baseball game each day.

Baseball Game Attendance

| Game Day | Number of People |
|----------|------------------|
| Friday | 28,317 |
| Saturday | 30,023 |
| Sunday | ? |

If the stadium had a total of 87,134 people that attended the three baseball games, how many people attended the game on Sunday?

A common misconception for some students is to add 28,317 and 30,023 resulting in the sum of two days, instead of finding the missing third day. These students would benefit from modeling a similar problem with manipulatives. When exploring word problems, students need to understand that their approach to solving may differ from other students. In this particular problem, there are several different strategies that students may use when solving. Some students may add together the number of people from Friday and Saturday and then subtract the sum from the total number of people that attended all three games. Other students may start from the whole and subtract each day to determine the number of people that attended on Sunday. Sharing ideas and strategies among peers in a “number talk” is an experience from which all students would benefit. It allows them to explore other methods of solving that a classmate suggests.