

**Just In Time Quick Check**  
**Standard of Learning (SOL) 5.19b**

**Strand:** Patterns, Functions, and Algebra

**Standard of Learning (SOL) 5.19b**

*The student will write an equation to represent a given mathematical relationship, using a variable.*

**Grade Level Skills:**

- Write an equation with addition, subtraction, multiplication, or division, using a variable to represent an unknown quantity.

**Just in Time Quick Check**

**Just in Time Quick Check Teacher Notes**

**Supporting Resources:**

- VDOE Mathematics Instructional Plans (MIPS)
  - [5.19abcd - Variables, Operations, Numbers, Oh my](#) (Word) / [\(PDF\)](#)
- VDOE Algebra Readiness Formative Assessment
  - [SOL 5.19b](#) (Word) | [\(PDF\)](#)
- VDOE Algebra Readiness Remediation Plans
  - [Creating Equations - Scenario Cards](#) (Word) | [\(PDF\)](#)
- VDOE Word Wall Cards: Grade 5 [\(Word\)](#) | [\(PDF\)](#)
  - Expressions
  - Variable Expressions

**Supporting and Prerequisite SOL:** [5.19a](#), [4.16](#), [3.17](#)

### SOL 5.19b - Just in Time Quick Check

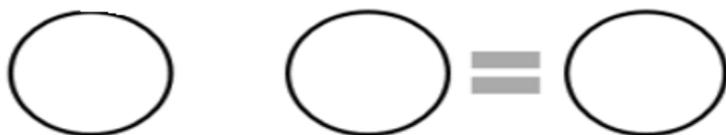
1. Write an equation to represent the unknown quantity. Allison had eight cookies. She gave three to her brother. How many cookies does she have left?
2. Kathleen has three times as many seashells in her collection as her friend Gabby. Gabby has 15 seashells. Write a number sentence that could be used to find  $k$ , the number of seashells that Kathleen has?
3. Tina wants to sell 30 items for the fundraiser. She knows that she has 5 days left to sell. Write an equation to find how many items she must sell per day in order to reach her goal.
4. Write an equation to represent the unknown quantity. Bella brought stickers to school to give to 12 of her friends. Each friend received 4 stickers. How many stickers did Bella bring to school? Let " $s$ " represent the number of stickers Bella brought to school.
5. Tony has twice as many baseball cards in his collection as his friend Antwon. Antwon has 32 baseball cards. Write a number sentence that could be used to find  $x$ , the number of baseball cards that Tony has?

## SOL 5.19b - Just in Time Quick Check Teacher Notes

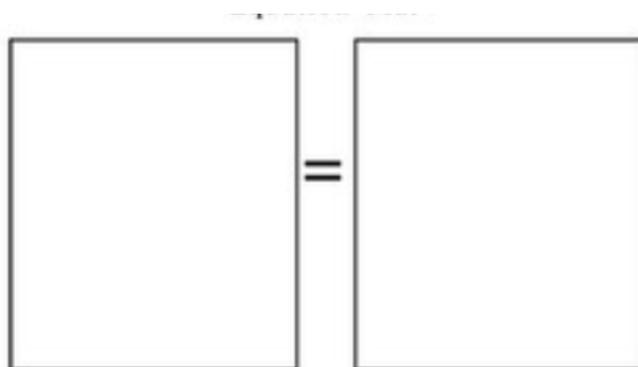
### Common Errors/Misconceptions and their Possible Indications

1. Write an equation to represent the unknown quantity. Allison had eight cookies. She gave three to her brother. How many cookies does she have left?

*A student may have trouble setting up the equation and understanding that since Allison is giving her cookies away, the operation is subtraction. Some students may need to use a box or a line for the unknown number first and then replace it with a variable. The use of manipulatives to set the problem up would be a great tool so that the student can act out what is occurring within the problem. A graphic organizer such as the one below would also be beneficial.*



*Because stories can utilize a variety of equality and expression structures, consider graphic organizers that accommodate for these structures. Equation mats are helpful graphic organizers because the total/parts can go on either side of the mat.*



*A more concrete model that could be used to set up an equation would be a balance scale, shown below. Consider what the student would use for variables and what they would use for constants.*





4. Write an equation to represent the unknown quantity. Bella brought stickers to school to give to 12 of her friends. Each friend received 4 stickers. How many stickers did Bella bring to school? Let “s” represent the number of stickers Bella brought to school.

*A student may confuse 12 as the amount of stickers because they saw “give to” as a keyword rather than Bella giving the unknown amount of stickers to 12 of her friends. Some students may need to use a box or a line for the unknown number first and then replace it with a variable. Encourage them to think about what is taking place within the statement. The use of manipulatives to set the problem up would be a great tool so that the student can act out what is occurring within the problem. A graphic organizer would also be beneficial.*

*Students should engage in rich, collaborative conversations where they create expressions and equations to match the story problem and defend their reasoning with a model (equation mat, balance scale, number line). Invite the class to critique each other’s models and equations: Does it make sense? How do you know? Can you write a similar equation that would NOT make sense? Do you have any questions for the team? How does the team’s equation match the model?*

5. Tony has twice as many baseball cards in his collection as his friend Antwon. Antwon has 32 baseball cards. Write a number sentence that could be used to find x, the number of baseball cards that Tony has?

*A student may have difficulty determining the operation for this problem because they do not understand the concept of “twice as many” and that it refers to multiplying by 2. This means that the student is lacking understanding of the operation rather than solely writing the equation. A student may also confuse the x used in multiplication with the variable “x.” Encourage the student to think about what is taking place within the statement. Some students may benefit from the use of manipulatives to set the problem up or using a graphic organizer.*

*Language such as “twice,” “double,” “3 times as many,” “half of,” etc. can be emphasized during purposefully planned Number Talks and numeracy routine. An example of a string that could pull in this vocabulary is:*

- $7 \times 4$
- $14 \times 2$
- $28 \times 1$

*As students engage in the strings one at a time, have them consider how they connect. What is the relationship between  $14 \times 2$  and  $7 \times 4$ ? What do you notice about the products? If a student says “divide by two,” name it “halving” or “half.” If a student says “times it by two,” name it “doubling,” or “twice as many.” These types of Number Talks are also imperative in building relational thinking as students continue to utilize efficient strategies for computation.*