

Just In Time Quick Check
Standard of Learning (SOL) A.1a

Strand: Expressions and Operations

Standard of Learning (SOL) A.1a

The student will represent verbal quantitative situations algebraically.

Grade Level Skills:

- Translate between verbal quantitative situations and algebraic expressions and equations.
- Represent practical situations with algebraic expressions in a variety of representations (e.g., concrete, pictorial, symbolic, verbal).

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [A.1ab - Translate and Evaluate Expressions](#) (Word) / [PDF Version](#)
 - [A.1ab - Evaluating Expressions Using Algebra Tiles](#) (Word) / [PDF Version](#)
- VDOE Algebra Readiness Formative Assessments
 - [A.1a,b](#) (Word) / [PDF](#)
- VDOE Word Wall Cards: Algebra I [\(Word\)](#) | [\(PDF\)](#)
 - Expression
 - Variable
 - Coefficient
 - Term
- Desmos Activity
 - [Expressions Mash Up](#)
 - [Translating Algebraic Expressions](#)

Supporting and Prerequisite SOL: [A.3a](#), [A.3b](#), [8.17](#), [7.12](#)

SOL A.1a - Just in Time Quick Check

1. Translate the following algebraic expression into a verbal expression: $-4(x + 3)$
2. Translate each algebraic expression into a verbal expression. Then compare and contrast the two verbal expressions. What do you notice?

a) $\sqrt{x} - 4$

b) $\sqrt{x - 4}$

3. Write an algebraic expression for each verbal expression.

Verbal Expression	Algebraic Expression
The difference between a number and five	
Five less than a number	
A number less five	
The difference between five and a number	

4. Write an algebraic expression for each verbal expression.

a) The product of the cube root of 5 and a number

b) The quotient of a number cubed and five

5. A high school is having a can food drive.

- The freshman class collected 54 more cans than the sophomore class.
- The junior class collected three times the number of cans collected by the sophomore class.
- The senior class collected ten cans less than the sophomore class.

Write an algebraic expression in one variable to model the total number of cans collected at the school.

SOL A.1a - Just in Time Quick Check Teacher Notes

Common Errors/Misconceptions and their Possible Indications

1. Translate the following algebraic expression into a verbal expression: $-4(x + 3)$

A common error students may make is to ignore the parenthesis and translate the expression as “Negative four times x plus three”. This indicates the student may need to develop a conceptual understanding of the distributive property. The teacher should model the problem using algebra tiles or other manipulatives to demonstrate how the -4 gets multiplied by each term within the parentheses.

2. Translate each algebraic expression into a verbal expression. Then compare and contrast the two verbal expressions. What do you notice?

a) $\sqrt{x} - 4$

b) $\sqrt{x - 4}$

A common mistake would be for students to confuse how to verbally express the square root of a quantity and possibly result in two verbal expressions with minimal differences between them. This indicates the student may need more conceptual understanding of working with quantities both in translating and evaluating. The misconception may be in understanding what it means for terms to be grouped together. The student should continue to model both algebraic and verbal expressions dealing with quantities with assistance as needed.

3. Write an algebraic expression for each verbal expression.

Verbal Expression	Algebraic Expression
The difference between a number and five	
Five less than a number	
A number less five	
The difference between five and a number	

A common error would be for students to mix up the order of subtraction ($x - 5$ versus $5 - x$) between the variable and the number depending upon the verbal expression used (“difference between,” “less than,” or “less”). The student may need to develop more conceptual understanding of these subtraction terms. The teacher should provide additional practice with multiple examples, including numerical ones and practical situations that can be simplified to show the relationship between the term and order of the numbers.

4. Write an algebraic expression for each verbal expression.

a) The product of the cube root of 5 and a number

b) The quotient of a number cubed and five

A common error for students is to confuse “cubed” and “cube root” and respond with 5^3n or $\frac{\sqrt[3]{n}}{5}$. This indicates the student may need more conceptual understanding of the difference between exponents and roots. The teacher should revisit the concept of the relationship between exponents and their corresponding inverse operations.

A student may also confuse the terms “product” and “quotient” and use the wrong operation to represent them. The teacher should provide additional practice and examples with the vocabulary of product and quotient to reinforce the terms.

5. A high school is having a can food drive.

- The freshman class collected 54 more cans than the sophomore class.
- The junior class collected three times the number of cans collected by the sophomore class.
- The senior class collected ten cans less than the sophomore class.

Write an algebraic expression in one variable to model the total number of cans collected at the school.

A common error for students is they will struggle to determine which class represents x . This may indicate students need help with organizing the information. It may help to have students create a chart to organize information from the problem and list each class separately. This will help them to express the other classes in terms of x .