

Writing Algebraic Expressions

STRAND: Patterns, Functions and Algebra

STRAND CONCEPT: Algebraic Expressions

SOL: 5.19c

Remediation Plan Summary

Students write verbal expressions as algebraic expressions

Common Errors and Misconceptions

Students may confuse the variable “ x ” with the symbol for multiplication, “ \times .”

Students will inappropriately apply the commutative property when translating expressions involving subtraction and division.

Materials

- White boards
- Dry-erase markers
- “Vocabulary Chart” worksheets

Introductory Activity

- Display the phrase: “Buenos Dias”. Ask the class to translate this phrase from Spanish to English. Ask students what it means to *translate from* one language to another. Now display the “LOL”. Ask students to translate this text language. Repeat the process with “OTF”. Let students offer other examples of translations. (this may be a good time to highlight the language skills of your ESOL students.) Explain to the students that in this lesson, they will be *translating* English phrases into algebraic (mathematical) expressions.

Plan for Instruction

- Put the students into groups. Distribute the “Vocabulary Chart” worksheets and ask students to work in groups to complete it.
- Review and discuss responses and add any additional words the students may generate.
- Using the completed vocabulary chart, walk the students through translating the following verbal expressions:
 - a) **Three runs more than the Yankees scored.** “Do we know how many runs the Yankees scored?” (No) “So, let r represent the number of runs the Yankees scored. The words ‘more than’ suggest addition, as shown on the chart. So, the expression should be $r + 3$.”
 - b) **Twice as many tomatoes as last year.** “Do we know how many tomatoes were grown last year?” (No) “So, let t represent the number of tomatoes grown last year. The word “twice” suggests multiplication by 2, as shown on the chart. So, the expression should be $2t$.”

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- c) **Half as many apples as John picked.** “Do we know how many apples John picked?” (No) “So, let a represent the number of apples John picked. The word “half” suggests division by 2, as shown on the chart. So, the expression should be $a \div 2$ or $\frac{a}{2}$.
- d) **Seven fewer fireflies than Tammy caught.** “Do we know how many fireflies Tammy has? (No) “So, let f represent the number of fireflies that Tammy has. The word “fewer” suggests subtraction, as shown on the chart. So the expression should be $f - 7$.
- Distribute a white board to each group of students. Present each of the following phrases, one at a time, to the students. Students should discuss the phrase with their group before writing an algebraic expression for it on the board. Remind groups to conceal their answers until you call for them.

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|-------------------------------------|--|
| a) The difference between g and 4 | $(g - 4, \text{ or } 4 - g)$ |
| b) The quotient of b and 5 | $(b \div 5 \text{ or } \frac{b}{5}, \text{ or } 5 \div b \text{ or } \frac{5}{b})$ |
| c) Seventeen less than p | $(p - 17)$ |
| d) Five years older than Paul | $(p + 5)$ |
| e) Jamila’s salary plus \$1,100 | $(s + 1,100)$ |
| f) The product of x and 2 | $(x \cdot 2 \text{ or } 2x)$ |

Pulling It All Together (Reflection)

Have the students translate the following phrases into algebraic expressions and then write a short explanation of how they know their expression is correct.

- Nine increased by some number.
- The sum of a number and six.
- Twice as many apples.

Note: The following pages are intended for classroom use for students as a visual aid to learning

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