October 31, 2014 Period 4 Lesson 3.1

Learning Objective: Students will be able to write and evaluate an expression written in words.

Lesson 3.1

October 31, 2014

Essential Question:

How can you write and evaluate an expression that represents a real-life problem?

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Self-Evaluation Scale

Score	Description
4	I can teach other students how to write and evaluate an expression written in words.
3	I can write and evaluate an expression written in words.
2	I recognize, but still need help to write and evaluate an expression written in words.
1	I do not know how to write and evaluate an expression written in words.

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Algebraic Expression

Expression that contains numbers, operations, and one or more symbol.

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Terms

Part of an algebraic expression

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Variable

Symbol that represents one or more numbers

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Coefficient

The numerical factor of a term that contains a variable

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Constant

A term without a variable

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1 Identifying Parts of an Algebraic Expression

Identify the terms, coefficients, and constants in each expression.

a. $5x + 13$

$\underbrace{5x} + \underbrace{13}$

Terms: $5x$, 13

Coefficient: 5

Constant: 13

b. $2z^2 + y + 3$

$\underbrace{2z^2} + \underbrace{y} + \underbrace{3}$

Terms: $2z^2$, $1y$, 3

Coefficients: 2, 1

Constant: 3

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2 Writing Algebraic Expressions Using Exponents

Write each expression using exponents.

a. $d \cdot d \cdot d \cdot d$

Because d is used as a factor 4 times, its exponent is 4.

∴ So, $d \cdot d \cdot d \cdot d = d^4$.

b. $1.5 \cdot h \cdot h \cdot h$

Because h is used as a factor 3 times, its exponent is 3.

∴ So, $1.5 \cdot h \cdot h \cdot h = 1.5h^3$.

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3 Evaluating Algebraic Expressions

a. Evaluate $k + 10$ when $k = 25$.

$k + 10 = 25 + 10$ Substitute 25 for k.

$= 35$ Add 25 and 10.

b. Evaluate $4 \cdot n$ when $n = 12$.

$4 \cdot n = 4 \cdot 12$ Substitute 12 for n.

$= 48$ Multiply 4 and 12.

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4 Evaluating an Expression with Two Variables

Evaluate $a \div b$ when $a = 16$ and $b = \frac{2}{3}$.

$a \div b = 16 \div \frac{2}{3}$ Substitute 16 for a and $\frac{2}{3}$ for b.

$= 16 \cdot \frac{3}{2}$ Multiply by the reciprocal of $\frac{2}{3}$, which is $\frac{3}{2}$.

$= 24$ Multiply.

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$a - b = a + -b$

5 Evaluating Expressions with Two Operations

a. Evaluate $3x - 14$ when $x = 5$.

$3x - 14 = 3(5) - 14$	Substitute 5 for x.
$= 15 - 14$	Using order of operations, multiply 3 and 5.
$= 1$	Subtract 14 from 15.

b. Evaluate $z^2 + 8.5$ when $z = 2$.

$z^2 + 8.5 = 2^2 + 8.5$	Substitute 2 for z.
$= 4 + 8.5$	Using order of operations, evaluate 2^2.
$= 12.5$	Add 4 and 8.5.

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Assignment

Complete problems 8, 12, 16, 20, 26, 30, 34, 36, 44, 46, 50, & 52 on pages 115 - 117 in your Big Ideas Text Book.

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$$\frac{24}{6} + 8$$

$$\frac{24}{9} + 8$$

$$-2\frac{6}{9} + 8$$

$$10\frac{1}{3}$$

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$7h + 3$

Terms = $7h$, 3

Variable = h

Coeff. = 7

Const. = 3

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$$n^2 + \frac{1}{2}d + 0$$

$T = n^2 , \frac{1}{2}d$

$V = n^2 , d$

$CO = 1 , \frac{1}{2}$

$Con = 0$

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$$\frac{24}{6} + 8$$

$$\frac{24}{9} + 8$$

$$2\frac{6}{9} + 8$$

$$10\frac{2}{3}$$

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Homework

In your Big Ideas Record and Practice Journal

page 60 + 2 Candies each!!!