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

Lesson 3.1   November 18, 2014

Essential Question:

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

Lesson 3.1   November 18, 2014

Lesson Objective:

Students will be able to:

write and evaluate an expression written in words.

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.

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

Algebraic Expression

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

$$5x + 3$$

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

$$5x + 3$$

Terms

$$6 \cdot 3x \cdot 4 + 4$$

$$72x + 4$$

Part of an algebraic expression

Seperated by + or −

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

$$2 \times 15 + x$$

Variable

$$3x + 2$$

Symbol that represents one or more numbers

Novemeber 18, 2014 Lesson 3.1 Period 3

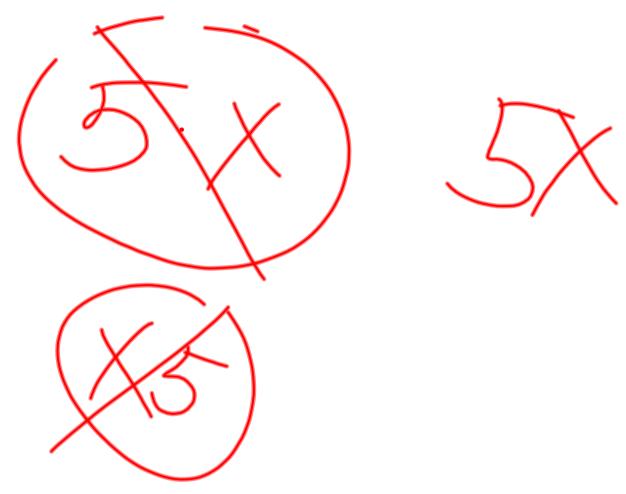Learning Objective: Students will be able to write and evaluate an expression written in words.

$$5x + 3$$

$$w + 3$$

Coefficient

$$c = 1$$

The numerical factor of a term that contains a variable

Novemeber 18, 2014 Lesson 3.1 Period 3

$$5x + 3 \cdot 4$$

Constant

A term without a variable

$5x$

$5x$

$x5$

Novemeber 18, 2014 Lesson 3.1 Period 3

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

1 Identifying Parts of an Algebraic Expression

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

a. $5x + 13$

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

$$5x + 13$$

Terms: $5x$, $\quad$ 13

Coefficient: 5

Constant: $\qquad$ 13

$$2z^2 + y + 3$$

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

Coefficients: 2, $\quad$ 1

Constant: $\qquad$ 3

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

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

rep add = mult

rep mut = expon

Novemeber 18, 2014 Lesson 3.1 Period 3

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

3 **Evaluating Algebraic Expressions**

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

$$k + 10 = 25 + 10 \qquad \text{Substitute 25 for } k.$$

$$= 35 \qquad \text{Add 25 and 10.}$$

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

$$4 \cdot n = 4 \cdot 12 \qquad \text{Substitute 12 for } n.$$

$$= 48 \qquad \text{Multiply 4 and 12.}$$

Novemeber 18, 2014 Lesson 3.1 Period 3

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

4 Evaluating an Expression with Two Variables

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

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

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

$= 24$ Multiply.

Novemeber 18, 2014 Lesson 3.1 Period 3

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

5 **Evaluating Expressions with Two Operations**

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

$$3x - 14 = 3(5) - 14 \qquad \text{Substitute 5 for } x.$$

$$= 15 - 14 \qquad \text{Using order of operations, multiply 3 and 5.}$$

$$= 1 \qquad \text{Subtract 14 from 15.}$$

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

$$z^2 + 8.5 = 2^2 + 8.5 \qquad \text{Substitute 2 for } z.$$

$$= 4 + 8.5 \qquad \text{Using order of operations, evaluate } 2^2.$$

$$= 12.5 \qquad \text{Add 4 and 8.5.}$$

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

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.

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

Lesson 3.1   November 18, 2014

Essential Question:

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

Lesson 3.1   November 18, 2014

Lesson Objective:

Students will be able to:

write and evaluate an expression written in words.

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.

Novemeber 18, 2014 Lesson 3.1 Period 3

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

Homework

In your Big Ideas Record and Practice Journal page 60.