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

Warm Up

3. $\dfrac{5}{7} \times \dfrac{3}{5}$

7. $\dfrac{13}{8} \times \dfrac{4}{7}$

11. $\dfrac{23}{3} \times \dfrac{1}{8}$

4. $\dfrac{5}{4} \times \dfrac{3}{4}$

8. $\dfrac{3}{5} \times \dfrac{13}{8}$

12. $\dfrac{3}{4} \times \dfrac{1}{4}$

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

Warm Up Answers

3. $\dfrac{5}{7} \times \dfrac{3}{5}$

   $= \dfrac{3}{7}$

7. $\dfrac{13}{8} \times \dfrac{4}{7}$

   $= \dfrac{13}{14}$

11. $\dfrac{23}{3} \times \dfrac{1}{8}$

   $= \dfrac{23}{24}$

4. $\dfrac{5}{4} \times \dfrac{3}{4}$

   $= \dfrac{15}{16}$

8. $\dfrac{3}{5} \times \dfrac{13}{8}$

   $= \dfrac{39}{40}$

12. $\dfrac{3}{4} \times \dfrac{1}{4}$

   $= \dfrac{3}{16}$

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

Lesson 3.1

October 30, 2014

Essential Question:

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

Lesson 3.1   October 30, 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.

Activity 1 & 2

Follow along with Activities 1 & 2 on pages 57 & 58 of your Big Ideas Record and Practice Journal.
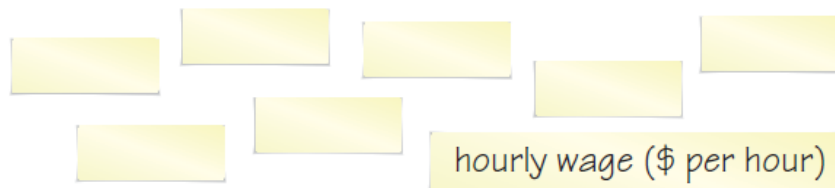
October 30, 2014 Period 4 Lesson 3.1

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

a. You babysit for 3 hours. You receive $12. What is your hourly wage?

- Write the problem. Underline the important numbers and units you need to solve the problem.
- Read the problem carefully a second time. Circle the key word for the question.

You babysit for 3 hours. You receive $12.

What is your hourly wage?

- Write each important number or word, with its units, on a piece of paper. Write $+$, $-$, $\times$, $\div$, and $=$ on five other pieces of paper.

hourly wage ($ per hour)

- Arrange the pieces of paper to answer the key word question, "What is your hourly wage?"

- Evaluate the expression that represents the hourly wage.

hourly wage = ☐ $\div$ ☐   Write.

= ☐   Evaluate.

So, your hourly wage is $☐ per hour.

b. How can you use your hourly wage to find how much you will receive for any number of hours worked?
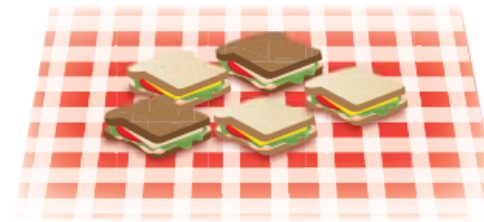
October 30, 2014 Period 4 Lesson 3.1

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

a. You wash cars for 2 hours. You receive $6. How much do you earn per hour?

b. You have $60. You buy a pair of jeans and a shirt. The pair of jeans costs $27. You come home with $15. How much did you spend on the shirt?

DENIM JEANS $27

c. For lunch, you buy 5 sandwiches that cost $3 each. How much do you spend?

d. You are running a 4500-foot race. How much farther do you have to go after running 2000 feet?

e. A young rattlesnake grows at a rate of about 20 centimeters per year. How much does a young rattlesnake grow in 2 years?

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.

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

Terms

Part of an algebraic expression

Separated by +, −

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

Variable

Symbol that represents one or more numbers

October 30, 2014 Period 4 Lesson 3.1

$3X$

M

Coefficient

The numerical factor of a term that contains a variable

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

$$3x + 2$$

Constant

A term without a variable

October 30, 2014 Period 4 Lesson 3.1

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. $5x + 13$

$$5x + 13$$

Terms: $5x$, 13

Coefficient: 5

Constant: 13

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

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

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

Coefficients: 2, 1

Constant: 3

$$5X$$

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

$$2 + 2 = X$$

$$X + 2 = 4$$

October 30, 2014 Period 4 Lesson 3.1

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

$(3)(9)$ $3z$

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 $n = 12$.

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

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

October 30, 2014 Period 4 Lesson 3.1

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.

$= \overset{8}{\cancel{16}} \cdot \dfrac{3}{\cancel{2}}$ Multiply by the reciprocal of $\dfrac{2}{3}$, which is $\dfrac{3}{2}$.

$= 24$ Multiply.

October 30, 2014 Period 4 Lesson 3.1

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 $z = 2$.

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

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

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