Proportional Relationships: Write Equations

Conceptual Lesson

Grade 7 · Unit 3 · Lesson 10

MC: 7.RP.2c

MPs ✓ Applied MP * Embedded MP

1	2	3	4	5	6	7	8
✓*						✓	*

Problem of the Day

Objective: _____

Vocabulary

Equation: two expressions of equal value separated by an equal sign

$$2 + 8 = 3 + 5 + 2$$

Proportional Relationship: a relationship between two equal ratios

Written form is $y = kx$; where k is constant, using the ordered data pairs (x, y).

Inverse Operations: the opposite operation; operations that undo each other

Addition ⟷ *Subtraction*

Multiplication ⟷ *Division*

Example:

$$5x = 2$$

$$\frac{5x}{5} = \frac{2}{5}$$

$$x = \frac{2}{5}$$

Notes

Steps:

1. Rewrite the situation as an equation with variables.
2. Find the unit rates using the inverse operation.
3. Determine which unit rate to use.
4. Multiply both sides of the equation by the required amount.

Structured Guided Practice

(A/B Partners Practice)

Directions: Write as an equation. Find the unit rate and solve.

1. The family sends 2,100 text messages in 6 months. How many do they send in 2 years?

2. The librarian stacks 108 books onto 9 shelves. How many books will fit on 15 shelves?

Final Check for Understanding

(Teacher Checks Work)

Directions: Write as an equation. Find the unit rate and solve.

1. There are 47 ounces of lotion in 3 bottles. How many ounces will be in 28 bottles?

2. On a map, $\frac{3}{4}$ of an inch is equivalent to 5 miles. How many inches would 600 miles be on the map?

Closure

Closure

Recap today's lesson with one or more of the following questions:

✓***MP1:*** *What do the coefficients in your unit rates represent?*
✓***MP7:*** *What similarities do you see in both unit rates in a proportion?*