

Unit 3

## Lesson 3: Representing Proportional Relationships

Let's graph proportional relationships.

### 3.1: Number Talk: Multiplication

Find the value of each product mentally.

$$15 \cdot 2$$

$$15 \cdot 0.5$$

$$15 \cdot 0.25$$

$$15 \cdot (2.25)$$

### 3.2: Representations of Proportional Relationships

1. Here are two ways to represent a situation.

Description: Jada and Noah counted the number of steps they took to walk a set distance. To walk the same distance,

Equation: Let  $x$  represent the number of steps Jada takes and let  $y$  represent the number of steps Noah takes.

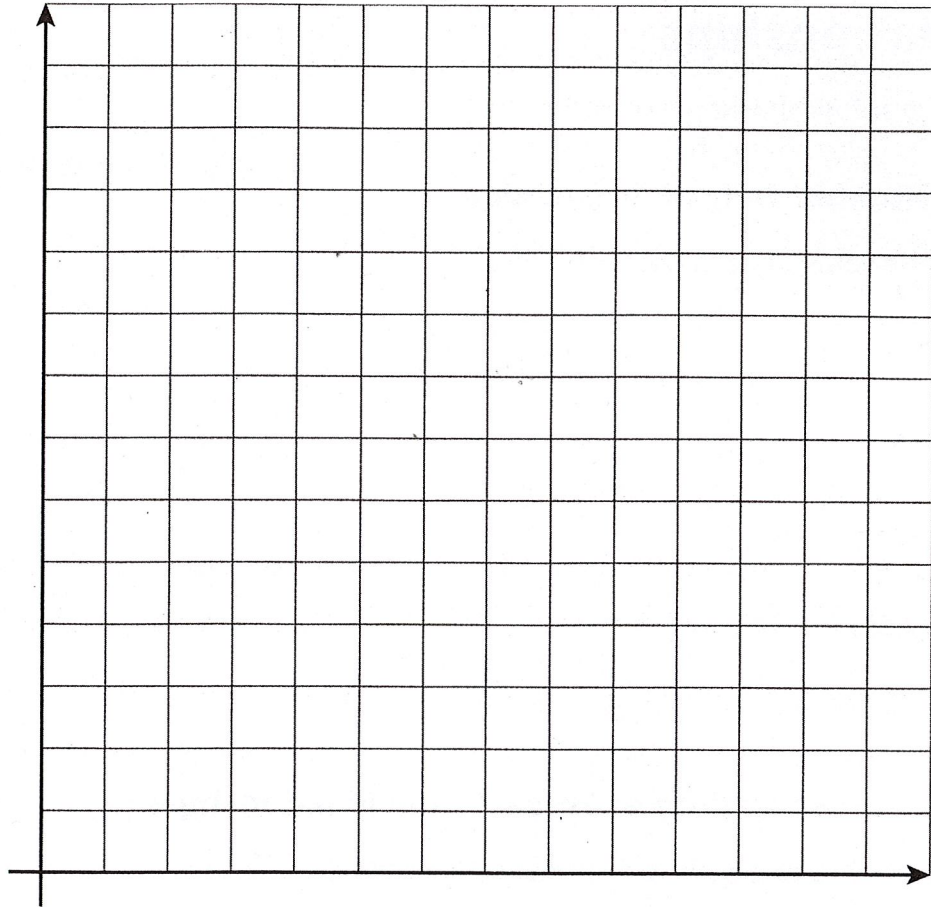
- Jada took 8 steps
- Noah took 10 steps

$$y = \frac{5}{4}x$$

Then they found that when Noah took 15 steps, Jada took 12 steps.

- a. Create a table that represents this situation with at least 3 pairs of values.

b. Graph this relationship and label the axes.



c. How can you see or calculate the constant of proportionality in each representation? What does it mean?

d. Explain how you can tell that the equation, description, graph, and table all represent the same situation.

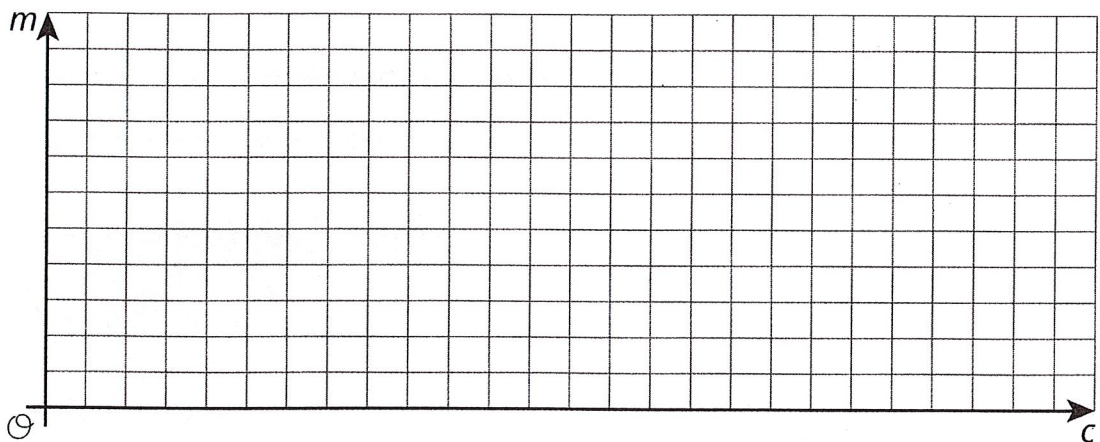
2. Here are two ways to represent a situation.

Description: The Origami Club is doing a car wash fundraiser to raise money for a trip. They charge the same price for every car. After 11 cars, they raised a total of \$93.50. After 23 cars, they raised a total of \$195.50.

Table:

number of cars	amount raised in dollars
11	93.50
23	195.50

- Write an equation that represents this situation. (Use  $c$  to represent number of cars and use  $m$  to represent amount raised in dollars.)
- Create a graph that represents this situation.



- How can you see or calculate the constant of proportionality in each representation? What does it mean?
- Explain how you can tell that the equation, description, graph, and table all represent the same situation.