Unit 3 Lesson 3: Representing Proportional Relationships

1 Number Talk: Multiplication (Warm up)

Student Task Statement

Find the value of each product mentally.

$15 \cdot 2$

$15 \cdot 0.5$

$15 \cdot 0.25$

$15 \cdot (2.25)$

2 Representations of Proportional Relationships

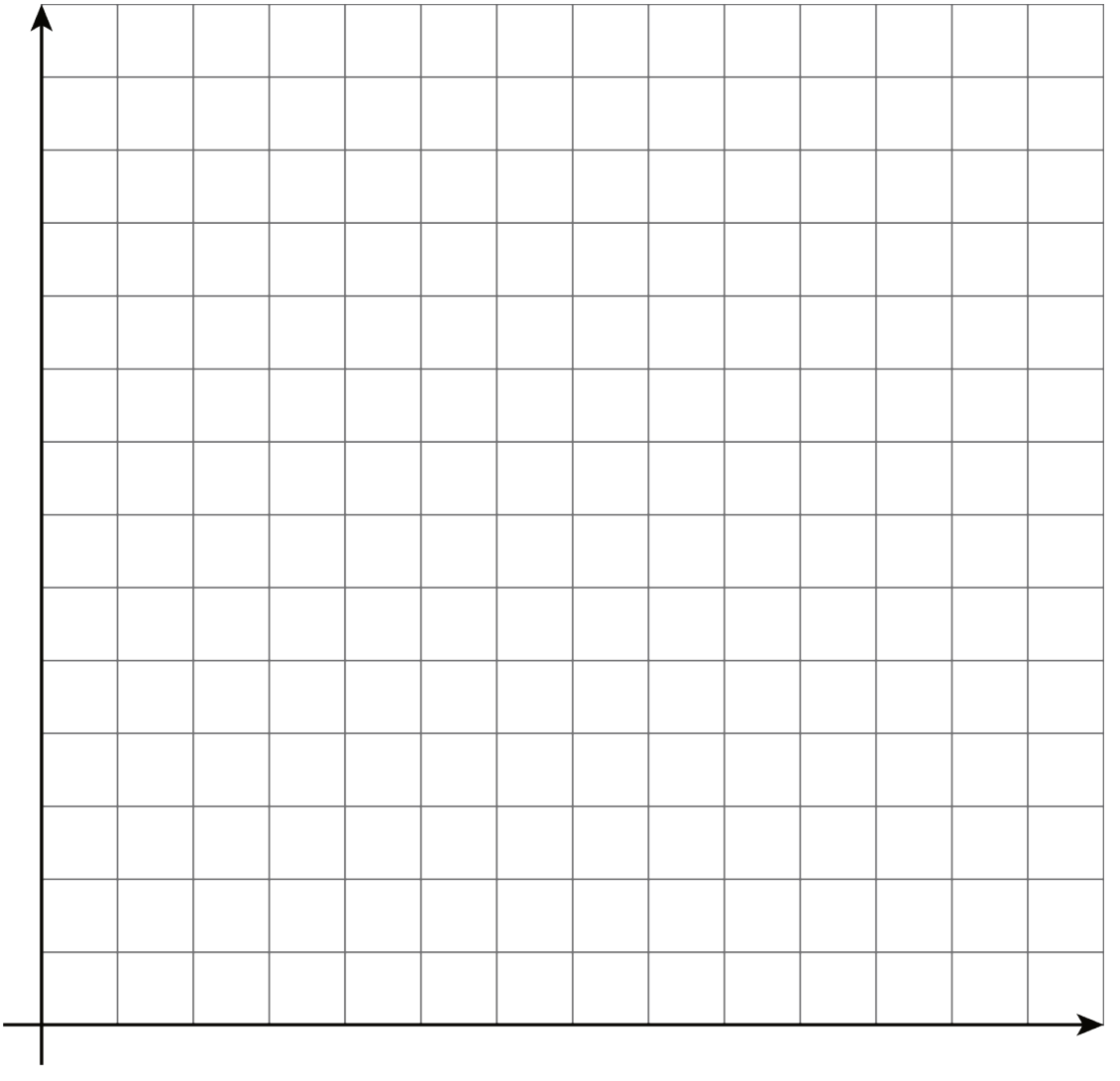
Student Task Statement

1. Here are two ways to represent a situation.

Description:	Equation:
Jada and Noah counted the number of steps they took to walk a set distance. To walk the same distance, Jada took 8 steps while Noah took 10 steps. Then they found that when Noah took 15 steps, Jada took 12 steps.	Let x represent the number of steps Jada takes and let y represent the number of steps Noah takes. $y = \frac{5}{4}x$

   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:

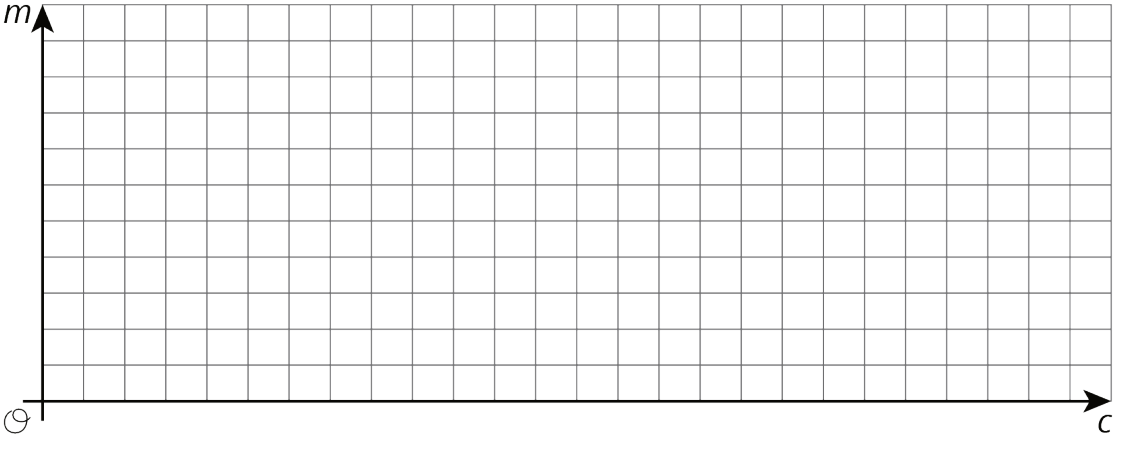
The Origami Club is doing a car wash fundraiser to raise money for a trip. They charge the same price for every car. After 11 cars, they raised a total of $93.50. After 23 cars, they raised a total of $195.50.

Table:

number of cars	amount raised in dollars
11	93.50
23	195.50

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

b. Create a graph that represents this situation.



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.

3 Info Gap: Proportional Relationships

Student Task Statement

Your teacher will give you either a *problem card* or a *data card*. Do not show or read your card to your partner.

If your teacher gives you the *problem card*:

1. Silently read your card and think about what information you need to be able to answer the question.
2. Ask your partner for the specific information that you need.
3. Explain how you are using the information to solve the problem.

   Continue to ask questions until you have enough information to solve the problem.
4. Share the *problem card* and solve the problem independently.
5. Read the *data card* and discuss your reasoning.

If your teacher gives you the *data card*:

1. Silently read your card.
2. Ask your partner *"What specific information do you need?"* and wait for them to *ask* for information.

   If your partner asks for information that is not on the card, do not do the calculations for them. Tell them you don't have that information.
3. Before sharing the information, ask "*Why do you need that information?*" Listen to your partner's reasoning and ask clarifying questions.
4. Read the *problem card* and solve the problem independently.
5. Share the *data card* and discuss your reasoning.

Pause here so your teacher can review your work. Ask your teacher for a new set of cards and repeat the activity, trading roles with your partner.