

# Proportional Relationships and Graphs



## ESSENTIAL QUESTION

How can you tell if a graph represents a proportional relationship?

### EXPLORE ACTIVITY

You can use a graph to decide if a relationship is a proportional relationship. If the graph has a line that starts at the origin, the relationship is proportional.

**Students sell banners for \$4 to raise money for their school. Is the relationship between the amount of money raised and the number of banners sold a proportional relationship?**

- A** Complete the table to compare the amount raised to the number of banners sold.

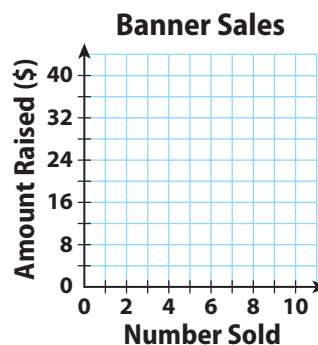
Number Sold	1	2	3		8
Amount Raised (\$)	4			20	

- B** Based on the table, is this a proportional relationship? How do you know?
- \_\_\_\_\_

- C** Use the table to create a list of ordered pairs (number sold, money raised). (1, 4), (2, \_\_\_), (3, \_\_\_), (\_\_\_, 20), (8, \_\_\_)

- D** Plot the ordered pairs.

- E** If no banners are sold, how much money will be raised? What is the ordered pair for this situation? If you draw a line to connect the points on the graph, does the line go through the origin? \_\_\_\_\_



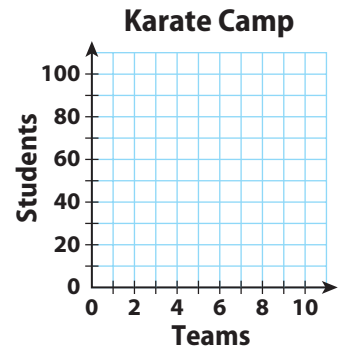
### REFLECT

1. The table and the graph are different ways to show the relationship between the amount of money raised and the number of banners sold if proportional. How are they similar? How are they different?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## YOUR TURN

2. There are 10 students on each team at a karate camp. Complete the table. Then graph the data as ordered pairs. Is the relationship a proportional relationship? \_\_\_\_\_

Teams	1	2	4		9
Students	10			70	



## Guided Practice

Complete the table. Tell whether the relationship is proportional. Graph the points on the graph.

1. Randal uses apples to make apple cider. He uses 5 pounds of apples to make each quart. Complete the table to compare the pounds of apples Randal uses to the number of quarts he makes.

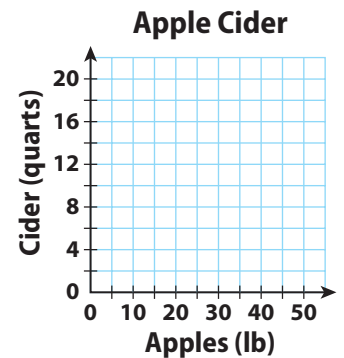
Apples (lb)	5	10	15		40
Cider (quarts)	1			6	

Write the data in the table as ordered pairs.

\_\_\_\_\_

Plot the points on the graph.

Based on the graph, is the relationship between the pounds of apples and the quarts of apple cider a proportional relationship? \_\_\_\_\_



## ESSENTIAL QUESTION CHECK-IN

2. What point must a proportional graph pass through? \_\_\_\_\_

## Independent Practice

Complete the table. Tell whether the relationship is proportional. Graph the points on the graph.

3. Zozey uses 8 gears on each model she builds.

Models	1	2	5	6	8
Gears Used					

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