

**Lesson Summary:**

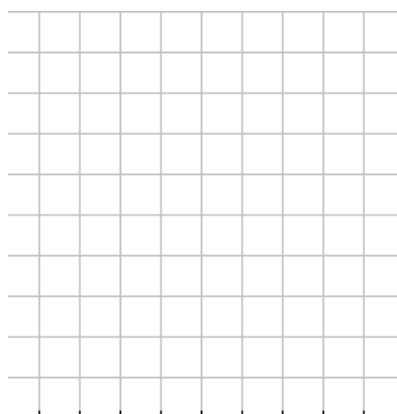
Proportional relationships can be represented through the use of graphs, tables, equations, diagrams, and verbal descriptions

In a proportional relationship arising from ratios and rates involving fractions, *the graph* gives a visual display of *all values* of the proportional relationship, especially the quantities that fall between integer values.

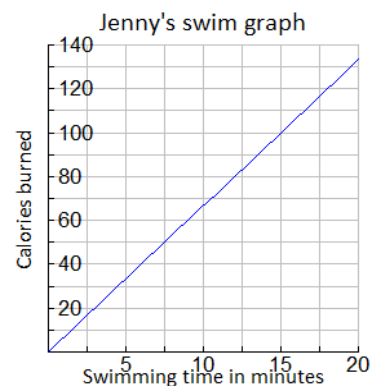
**Problem Set**

- Students are responsible for providing snacks and drinks for the Junior Beta Club Induction Reception. Susan and Myra were asked to provide the punch for the 100 students and family members who will attend the event. The chart below will help Susan and Myra determine the proportion of cranberry juice to sparkling water that will be needed to make the punch. Complete the chart, graph the data, and write the equation that models this proportional relationship.

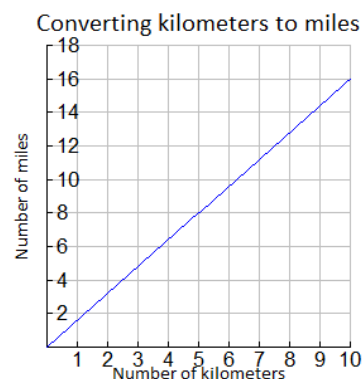
Sparkling water (cups)	Cranberry juice (cups)
1	$\frac{4}{5}$
5	4
8	
12	$9\frac{3}{5}$
	40
100	



2. Jenny is a member of a summer swim team.
  - a. How many calories does she burn in one minute?
  - b. Use the graph below to determine the equation that models how many calories Jenny burns within a certain number of minutes.
  - c. How long will it take her to burn off a 480 calorie smoothie that she had for breakfast?



3. Students in a World Geography Class want to determine the distances between cities in Europe. The map has a European Publisher which gives all distances in kilometers. These students want to determine the number of miles between towns so that they can compare distances with a unit of measure that they are already familiar with. The graph below shows the relationship between a given number of kilometers and the corresponding number of miles.
  - a. Find the constant of proportionality or the rate of miles per kilometer for this problem and write the equation that models this relationship
  - b. What is the distance in kilometers between towns that are 5 miles apart?
  - c. Describe the steps you would take to determine the distance in miles between two towns that are 200 kilometers apart?



4. During summer vacation, Lydie spent time with her grandmother picking blackberries. They decided to make blackberry jam for their family. Her grandmother said that to make jam, you must cook the berries until they become juice and then combine the juice with the other ingredients to make the jam.
  - a. Use the table below to determine the constant of proportionality of cups of juice to cups of blackberries?
  - b. Write an equation that will model the relationship between the number of cups of blackberries and the number of cups of juice?
  - c. How many cups of juice were made from 12 cups of berries? How many cups of berries are needed to make 8 cups of juice?

Blackberries	Juice
0	0
4	$1\frac{1}{3}$
8	$2\frac{2}{3}$
12	
	8