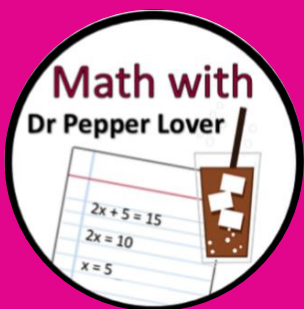
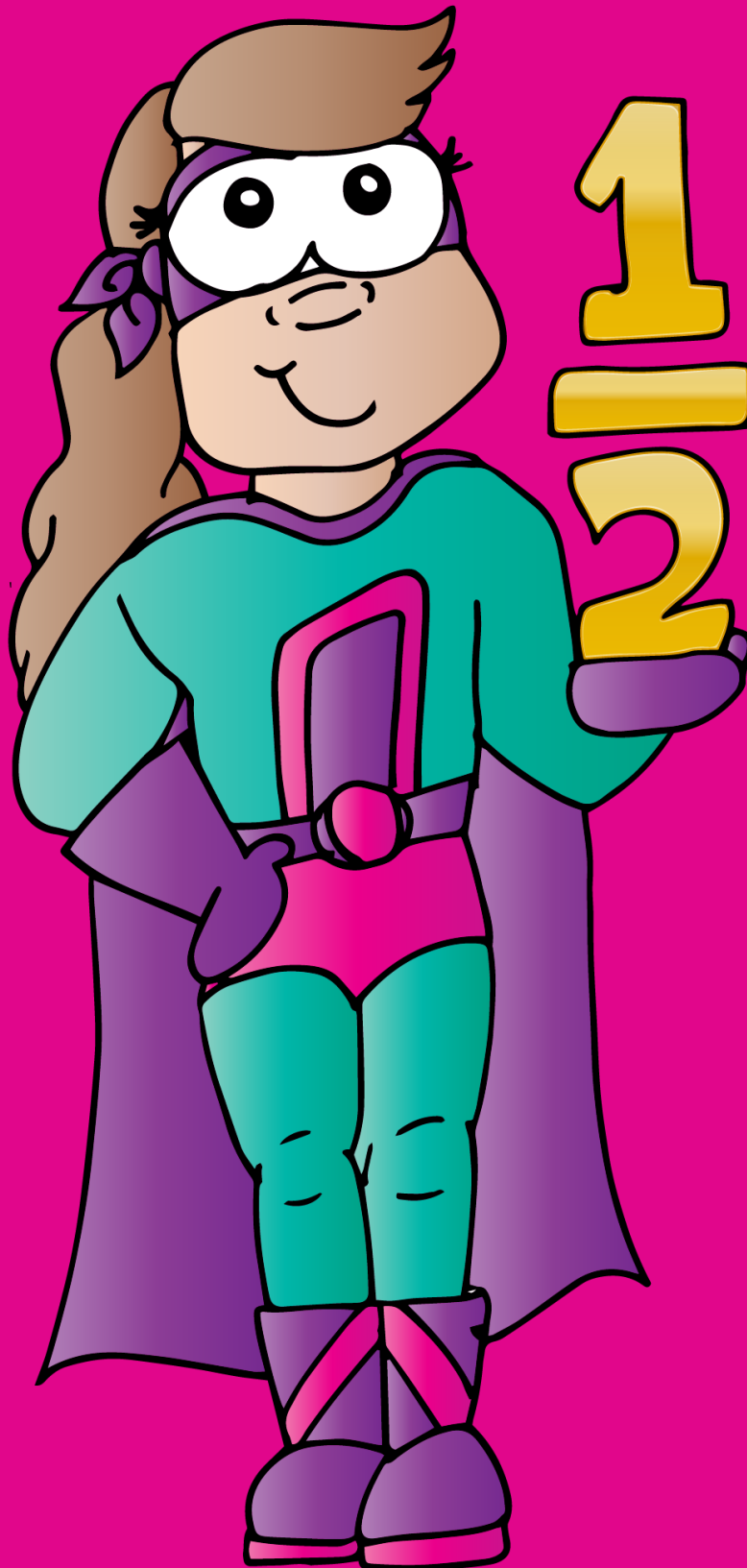


COLOR BY NUMBER

Dimensional Analysis: Converting Rates



Dimensional Analysis: Converting Rates

Name: _____

Solve the following dimensional analysis problems and round your answers to the nearest hundredth. Show all of your work! Then match each problem to its solution on the coloring page. Find the problem number in the picture and color it the color that is associated with that problem's solution.

- 1) A bottlenose dolphin can swim 2.68 meters per second. Find the dolphin's speed in miles per hour.

- 2) A bathtub empties at 15 gallons per minute. What is this in liters per second?

- 3) Your heart beats over 100,000 times per day. Find the number of beats per second.

- 4) The earth experiences 50,000 earthquakes per year. Assuming it is a year with 365 days, find the number of earthquakes per hour.

- 5) In 1936 Jesse Owens, an American track star, beat a race horse over a 100 yard course. It took him only 5.5 seconds. What is his speed in miles per hour?

- 6) The average human will shed 40 pounds of skin over the course of 75 years. How many ounces of skin is shed per week?

- 7) A baby robin eats 14 feet of earthworms every day. Find the number of miles a robin would eat in its first year.

- 8) The average American eats about 11.9 pounds of cereal per year. How many ounces of cereal per week will the average American eat?

Solve the following dimensional analysis problems. Show your work! Then match each problem to its solution on the coloring page. Find the problem number in the picture and color it the color that is associated with that problem's solution.



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<u>ANSWERS</u>	
LIGHT BLUE 0.97	BLUE 5.99
GRAY 0.95	YELLOW 1.16
ORANGE 3.66	BLACK 0.16
RED 37.19	LIGHT BROWN 5.71

Dimensional Analysis: Converting Rates

Name: _____

Solve the following dimensional analysis problems and round your answers to the nearest hundredth. Show all of your work! Then match each problem to its solution on the coloring page. Find the problem number in the picture and color it the color that is associated with that problem's solution.

- 1) A bottlenose dolphin can swim 2.68 meters per second. Find the dolphin's speed in miles per hour.

$$\frac{2.68 \text{ meters}}{1 \text{ second}} \cdot \frac{3.28 \text{ feet}}{1 \text{ meter}} \cdot \frac{1 \text{ mile}}{5280 \text{ feet}} \cdot \frac{3600 \text{ seconds}}{1 \text{ hour}} = 5.99 \text{ miles per hour}$$

- 2) A bathtub empties at 15 gallons per minute. What is this in liters per second?

$$\frac{15 \text{ gallons}}{1 \text{ minute}} \cdot \frac{3.79 \text{ liters}}{1 \text{ gallon}} \cdot \frac{1 \text{ minute}}{60 \text{ seconds}} = .95 \text{ liters per second}$$

- 3) Your heart beats over 100,000 times per day. Find the number of beats per second.

$$\frac{100,000 \text{ heart beats}}{1 \text{ day}} \cdot \frac{1 \text{ day}}{24 \text{ hours}} \cdot \frac{1 \text{ hour}}{60 \text{ minutes}} \cdot \frac{1 \text{ minute}}{60 \text{ seconds}} = 1.16 \text{ beats per second}$$

- 4) The earth experiences 50,000 earthquakes per year. Assuming it is a year with 365 days, find the number of earthquakes per hour.

$$\frac{50,000 \text{ earthquakes}}{1 \text{ year}} \cdot \frac{1 \text{ year}}{365 \text{ days}} \cdot \frac{1 \text{ day}}{24 \text{ hours}} = 5.71 \text{ earthquakes per hour}$$

- 5) In 1936 Jesse Owens, and American track star, beat a race horse over a 100 yard course. It took him only 5.5 seconds. What is his speed in miles per hour?

$$\frac{100 \text{ yards}}{5.5 \text{ seconds}} \cdot \frac{3 \text{ feet}}{1 \text{ yard}} \cdot \frac{1 \text{ mile}}{5280 \text{ feet}} \cdot \frac{3600 \text{ seconds}}{1 \text{ hour}} = 37.19 \text{ miles per hour}$$

- 6) The average human will shed 40 pounds of skin over the course of 75 years. How many ounces of skin is shed per week?

$$\frac{40 \text{ pounds}}{75 \text{ years}} \cdot \frac{16 \text{ ounces}}{1 \text{ pound}} \cdot \frac{1 \text{ year}}{52 \text{ weeks}} = 0.16 \text{ ounces per week}$$

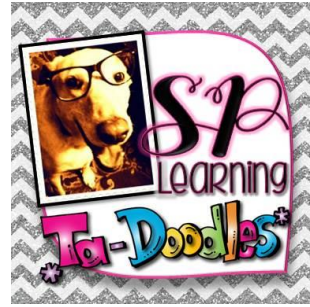
- 7) A baby robin eats 14 feet of earthworms every day. Find the number of miles a robin would eat in its first year.

$$\frac{14 \text{ feet}}{1 \text{ day}} \cdot \frac{1 \text{ mile}}{5280 \text{ feet}} \cdot \frac{365 \text{ days}}{1 \text{ year}} = .97 \text{ miles per year}$$

- 8) The average American eats about 11.9 pounds of cereal per year. How many ounces of cereal per week will the average American eat?

$$\frac{11.9 \text{ pounds}}{1 \text{ year}} \cdot \frac{16 \text{ ounces}}{1 \text{ pound}} \cdot \frac{1 \text{ year}}{52 \text{ weeks}} = 3.66 \text{ ounces per week}$$

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