

Chapter 5 Completed Graphic Organizer

Name _____

Date _____

Equivalent ratios: two ratios that describe the same relationship.

Example

3 : 4 and 9 : 12

Example

50 to 40 and 5 to 4

Example

1 : 12 and 5 to 60

Ratio table: a table used to find and organize equivalent ratios.

Example

Girls	5	10	20
Boys	3	6	12

Equivalent ratios: 5 : 3, 10 : 6, 20 : 12

Example

Flour (cups)	3	6	9	12
Water (cups)	1	2	3	4

Equivalent ratios: 3 : 1, 6 : 2, 9 : 3, 12 : 4

Example

Red	3	18
Yellow	7	42

Equivalent ratios: 3 : 7, 18 : 42

Rate: a ratio of two quantities using different units.

Example

$\frac{\$135}{3 \text{ hours}}$

Example

$\frac{63 \text{ feet}}{12 \text{ seconds}}$

Example

$\frac{8 \text{ hits}}{25 \text{ at bats}}$

4.

Unit rate: a rate that compares a quantity to one unit of another quantity.

Example

$\frac{60 \text{ miles}}{1 \text{ hour}}$

Example

$\frac{5.25 \text{ feet}}{1 \text{ second}}$

Example

$\frac{72 \text{ words}}{1 \text{ minute}}$

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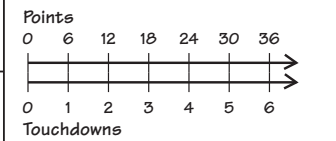
Name _____

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5.

Equivalent rates: rates that have the same unit rate.

Example



Example

Distance (feet)	36	12	96
Time (seconds)	3	1	8

Equivalent rates: $\frac{36 \text{ ft}}{3 \text{ sec}} = \frac{12 \text{ ft}}{1 \text{ sec}} = \frac{96 \text{ ft}}{8 \text{ sec}}$

Example

Cost (dollars)	17.5	3.5	7
Apples (pounds)	5	1	2

Equivalent rates: $\frac{\$17.50}{5 \text{ lb}} = \frac{\$3.50}{1 \text{ lb}} = \frac{\$7.00}{2 \text{ lb}}$

6.

Percent: a part-to-whole ratio where the whole is 100. So, you can write a percent as a fraction with a denominator of 100.

Example

$$40\% = 40 \text{ out of } 100 = \frac{40}{100} = \frac{2}{5}$$

Example

$$112\% = \frac{112}{100} = 1\frac{12}{100} = 1\frac{3}{25}$$

Example

$$\frac{9}{20} = \frac{9 \times 5}{20 \times 5} = \frac{45}{100} = 45\%$$

7.

U.S. customary system: a system of measurement that contains units for length, capacity, and weight.

Example

Unit of length: foot

Example

Unit of capacity: quart

Example

Unit of weight: pound

8.

Metric system: a decimal system of measurement, based on powers of 10, that contains units for length, capacity, and mass.

Example

Unit of length: meter

Example

Unit of capacity: liter

Example

Unit of mass: gram

9.

Conversion factor: a rate that equals 1.

Example

Length: $\frac{1 \text{ mi}}{5280 \text{ ft}}$ and $\frac{5280 \text{ ft}}{1 \text{ mi}}$, $\frac{1 \text{ m}}{3.28 \text{ ft}}$ and $\frac{3.28 \text{ ft}}{1 \text{ m}}$, $\frac{1 \text{ cm}}{10 \text{ mm}}$ and $\frac{10 \text{ mm}}{1 \text{ cm}}$

Example

Capacity: $\frac{1 \text{ gal}}{4 \text{ qt}}$ and $\frac{4 \text{ qt}}{1 \text{ gal}}$, $\frac{1 \text{ qt}}{0.95 \text{ L}}$ and $\frac{0.95 \text{ L}}{1 \text{ qt}}$, $\frac{1 \text{ L}}{1000 \text{ ml}}$ and $\frac{1000 \text{ ml}}{1 \text{ L}}$

Example

Mass: $\frac{1 \text{ lb}}{16 \text{ oz}}$ and $\frac{16 \text{ oz}}{1 \text{ lb}}$, $\frac{1 \text{ lb}}{0.45 \text{ kg}}$ and $\frac{0.45 \text{ kg}}{1 \text{ lb}}$, $\frac{1 \text{ kg}}{1000 \text{ g}}$ and $\frac{1000 \text{ g}}{1 \text{ kg}}$

Example

Time: $\frac{1 \text{ h}}{60 \text{ min}}$ and $\frac{60 \text{ min}}{1 \text{ h}}$, $\frac{1 \text{ day}}{24 \text{ h}}$ and $\frac{24 \text{ h}}{1 \text{ day}}$, $\frac{1 \text{ h}}{3600 \text{ sec}}$ and $\frac{3600 \text{ sec}}{1 \text{ h}}$

10.

Unit analysis: a process you can use to decide which conversion factor will produce the appropriate units.

Example

$$12 \text{ lb} = \underline{\hspace{1cm}} \text{ oz}$$

$$12 \cancel{\text{ lb}} \cdot \frac{16 \text{ oz}}{1 \cancel{\text{ lb}}} = 192 \text{ oz}$$

Example

$$25 \text{ ml} = \underline{\hspace{1cm}} \text{ L}$$

$$25 \cancel{\text{ ml}} \cdot \frac{1 \text{ L}}{1000 \cancel{\text{ ml}}} = 0.025 \text{ L}$$

Example

$$35 \text{ mph} = \underline{\hspace{1cm}} \text{ ft/sec}$$

$$\frac{35 \cancel{\text{ mi}}}{1 \cancel{\text{ h}}} \left(\frac{5280 \text{ ft}}{1 \cancel{\text{ mi}}} \right) \left(\frac{1 \cancel{\text{ h}}}{3600 \text{ sec}} \right) = \frac{184,800 \text{ ft}}{3600 \text{ sec}} = 51.3 \text{ ft/sec}$$