

4.2 - Converting Measurements



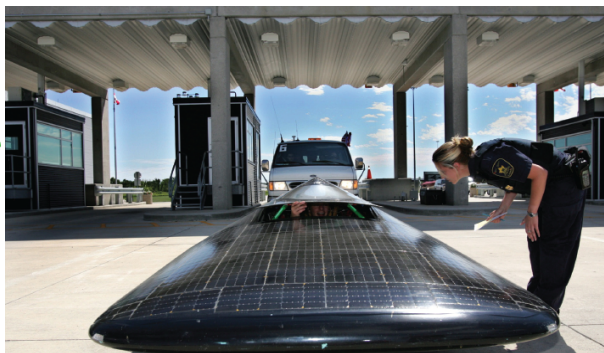
Make Connections

Two cars are driven in opposite directions from a Canada/United States border crossing.

In one hour, Hana drove 62 mi. south while Farrin drove 98 km north.

How could you determine which vehicle travelled farther from the border?

$$62 \text{ mi} \times \frac{1.6093 \text{ Km}}{1 \text{ mi}} = 99.78 \text{ Km} \text{ (South)}$$



**THE CONVERSION FACTORS
BETWEEN SI AND IMPERIAL UNITS**

<i>SI to Imperial</i>	<i>Imperial to SI</i>
1 mm = 0.0394 in	1 in = 25.4 mm
1 cm = 0.3937 in	1 inch = 2.54 cm
1 m = 3.2808 ft	1 ft = 0.3048 m
1 m = 1.0936 yd	1 yd = 0.9144 m
1 km = 0.6214 mi	1 mi = 1.6093 km

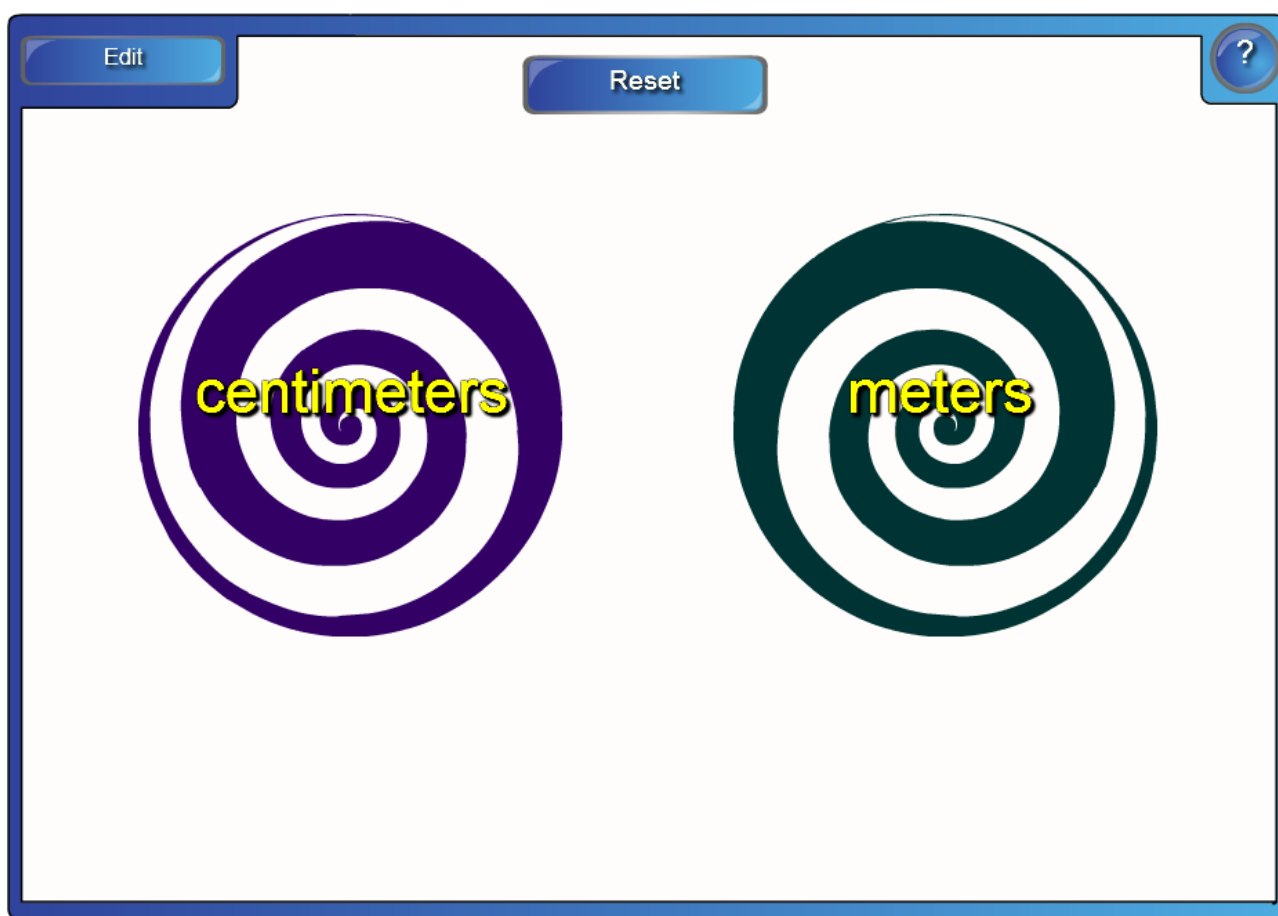
IMPORTANT CONVERSIONS...

$$1 \text{ m} = 1.0936 \text{ yd}$$

$$1 \text{ mi.} = 1.6093 \text{ km}$$

$$1 \text{ in.} = 2.54 \text{ cm}$$

Word	Description
✓ Yard	36 inches
✓ Foot	12 inches
✓ Meter	39 1/2 centimeters
✓ Yard	3 feet
✓ Inch	2 1/2 centimeters



Interface for a measurement conversion activity. The interface includes a top navigation bar with buttons for 'Edit', 'Check', 'Reset', 'Solve', and a help icon. The main area is divided into three columns: 'inches', 'feet', and 'yards'. Objects are placed in these columns to represent their measurement units, with green checkmarks indicating successful placement.

inches	feet	yards
book ✓		door ✓
pencil ✓	arm ✓	refridgerator ✓
		flag pole ✓

PRACTICE: Converting IMPERIAL to METRIC

Convert each measurement. Answer to the nearest tenth.

- a) 16 in. to centimetres
- b) 4 ft. to metres
- c) 5 yd. to metres
- d) 1650 yd. to kilometres
- e) 6 mi. to kilometres
- f) 2 in. to millimetres



Answers will vary depending on the conversion ratios used.

- 4. a) 40.6 cm
- b) 1.2 m
- c) 4.6 m
- d) 1.5 km
- e) 9.7 km
- f) 50.8 mm



$$a) 16 \cancel{\text{in}} \times \frac{2.54 \text{ cm}}{1 \cancel{\text{in}}} = 40.6 \text{ cm}$$

$$b) 4 \text{ ft} \times \frac{1 \text{ yd}}{3 \cancel{\text{ft}}} \times \frac{1 \text{ m}}{1.0936 \text{ yd}} = 1.2 \text{ m}$$

$$c) 5 \text{ yd} \times \frac{1 \text{ m}}{1.0936 \text{ yd}} = 4.6 \text{ m}$$

$$d) 1650 \text{ yd} \times \frac{1 \text{ m}}{1.0936 \text{ yd}} \times \frac{1 \text{ km}}{1000 \text{ m}} = 1.5 \text{ km}$$

1.3 Relating SI and Imperial Units

$$e) 6 \cancel{\text{mi}} \times \frac{1.6093 \text{ km}}{1 \cancel{\text{mi}}} = 9.7 \text{ km}$$

$$f) 2 \text{ in} \times \frac{2.54 \text{ cm}}{1 \cancel{\text{in}}} \times \frac{10 \text{ mm}}{1 \cancel{\text{cm}}} = 50.8 \text{ mm}$$

PRACTICE: Converting METRIC to IMPERIAL

Convert each measurement.

- a) 25 mm to the nearest inch
- b) 2.5 m to the nearest foot
- c) 10 m to the nearest yard
- d) 150 km to the nearest mile



Answers will vary depending on the conversion factor used.

- 5. a) 1 in.
- b) 8 ft.
- c) 11 yd.
- d) 93 mi.

$$a) 25 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} \times \frac{1 \text{ in}}{2.54 \text{ cm}} = 1 \text{ in}$$

$$b) 2.5 \text{ m} \times \frac{1.0936 \text{ yd}}{1 \text{ m}} \times \frac{3 \text{ ft}}{1 \text{ yd}} = 8 \text{ ft}$$

$$c) 10 \text{ m} \times \frac{1.0936 \text{ yd}}{1 \text{ m}} = 11 \text{ yd}$$

$$d) 150 \text{ km} \times \frac{1 \text{ mi}}{1.6093 \text{ km}} = 93 \text{ mi}$$

1.3 Relating SI and Imperial Units

HOMework...

Worksheet - Converting Measurements.docx



Attachments

Worksheet - Converting Measurements.docx