

Unit Switch Lab

Use conversion facts to change units in real situations.

GRADE 6 • NY-6.RP.3.d

NY-6.RP.3.d "Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities."

NAME _____

DATE _____

CHOOSE A CONVERSION FACTOR

Use a conversion fact to make a fraction equal to 1. Multiply by a conversion fraction so the unit you do not want cancels. Changing to a smaller unit makes the number larger, while changing to a larger unit makes the number smaller.

WORKED EXAMPLE

Convert 7 m to centimeters.

1. $1 \text{ m} = 100 \text{ cm}$.

2. $7 \text{ m} \times 100 \text{ cm}/1 \text{ m} = 700 \text{ cm}$.

3. The m units cancel, leaving centimeters.

Answer: 700 cm

PRACTICE 6 problems

1 Convert 8 ft to inches.

ANSWER _____

2 Convert 54 in to feet and inches.

ANSWER _____

3 Convert 2 1/2 lb to ounces.

ANSWER _____

4 Convert 3 qt to cups.

ANSWER _____

5 Convert 2,400 mL to liters.

ANSWER _____

6 A caterpillar travels 24 inches in 8 minutes. It keeps the same pace for 14 minutes. How many feet does it travel?

ANSWER _____

APPLY IT Show your work

- 1** A robotics team needs $2\frac{3}{4}$ feet of wire for each of 4 sensors. The wire is measured in inches. How many inches of wire does the team need?

WORK SPACE

ANSWER _____

- 2** A runner completes 5 laps that are each 1.8 kilometers long. How many meters does the runner travel?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A video club has $3\frac{1}{4}$ hours of footage. It puts the footage into clips that are 15 minutes long. How many full clips can it make? Explain your reasoning.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Convert 8 ft to inches.	96 in
2	Convert 54 in to feet and inches.	4 ft 6 in
3	Convert 2 1/2 lb to ounces.	40 oz
4	Convert 3 qt to cups.	12 cups
5	Convert 2,400 mL to liters.	2.4 L
6	A caterpillar travels 24 inches in 8 minutes. It keeps the same pace for 14 minutes. How many feet does it travel?	3 1/2 ft

PART 2 • APPLY IT

- 132 in** Multiply $2\frac{3}{4}$ ft by 4 to get 11 ft. Then multiply 11 by 12 inches per foot.
- 9,000 m** Multiply 1.8 km by 5 laps to get 9 km. Multiply 9 by 1,000 meters per kilometer.

CHALLENGE

13 clips. $3\frac{1}{4}$ hours = 195 minutes, and $195 \div 15 = 13$.

Accept equivalent unit forms, such as 3.5 ft for $3\frac{1}{2}$ ft. For the challenge, accept a correct explanation that converts hours to minutes before dividing.