

LESSON

2

Measurement and Geometry

Reading Strategies: Understand Vocabulary

Knowing the meaning of the prefixes for metric units helps you understand the size of each unit.

The prefix *milli-* means **1 thousandth**.

The prefix *centi-* means **1 hundredth**.

The prefix *kilo-* means **1,000**.

When you convert from a larger unit to a smaller unit, you multiply by a power of 10.

When you convert from a smaller unit to a larger unit, you divide by a power of 10.

Length To change from kilometers to meters, multiply by 1,000.
To change from meters to kilometers, divide by 1,000.

To change from meters to centimeters, multiply by 100.
To change from centimeters to meters, divide by 100.

Mass To change from kilograms to grams, multiply by 1,000.
To change from grams to kilograms, divide by 1,000.

Capacity To change from liters to milliliters, multiply by 1,000.
To change from milliliters to liters, divide by 1,000.

Answer each question.

1. What does the prefix *milli-* mean? _____
2. What does the prefix *kilo-* mean? _____
3. What does the prefix *centi-* mean? _____
4. How do you convert meters to kilometers? _____
5. How do you convert liters to milliliters? _____
6. How do you convert centimeters to meters? _____
7. How do you convert milliliters to liters? _____
8. How do you convert meters to centimeters? _____

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2

Measurement and Geometry**Problem Solving: Converting Metric Units**

Write the correct answer.

1. The St. Gotthard Tunnel in Switzerland is the world's longest tunnel. It is 16.3 kilometers long. What is the tunnel's length in meters?
2. Ostriches are the world's heaviest birds. On average, they have a mass of 156,500 grams. What is the mass of the average ostrich in kilograms?
3. The huge flower of the titam arum plant of Sumatra only lives for one day. During that time it grows 75 millimeters. What is the flower's height in centimeters?
4. The average male elephant drinks about 120,000 milliliters of water each day. How many liters of water do most male elephants drink each day?

Circle the letter of the correct answer.

5. The first successful steam locomotive pulled 10,886.4 kilograms of iron. How many grams of iron did the locomotive pull?
A 10.89 grams
B 108.86 grams
C 10,886,400 grams
D 108,864,000 grams
6. The track used by the first successful steam locomotive was 15.3 kilometers long. How many meters long was the track?
F 0.153 meters
G 1.53 meters
H 153 meters
J 15,300 meters
7. About 2.03 meters of rain fall each year in a tropical rain forest. About how many centimeters of rainfall are there each year in a tropical rain forest?
A 20.3 centimeters
B 203 centimeters
C 2,030 centimeters
D 20,300 centimeters
8. The top layer of trees in a tropical forest has trees that can reach 6,096 centimeters in height. How many meters tall are these trees?
F 6.096 meters
G 60.96 meters
H 609.6 meters
J 609,600 meters