

Unit Bridge Quest

Use conversion factors to move between measurement systems.

GRADE 7 • MA.7.AR.3.3

MA.7.AR.3.3 "Solve mathematical and real-world problems involving the conversion of units across different measurement systems."

NAME _____

DATE _____

CROSS-SYSTEM CONVERSIONS

A conversion factor tells how units in one system match units in another system. Multiply by a factor that cancels the unit you have and leaves the unit you need. Round only when the problem tells you to round.

WORKED EXAMPLE

Convert 5 inches to centimeters.
Use 1 inch = 2.54 centimeters.

1. Start with 5 inches.
2. Multiply by 2.54 centimeters for each inch.
3. $5 \times 2.54 = 12.70$.

Answer: 12.7 centimeters

PRACTICE 6 problems

- 1** Convert 8 inches to centimeters. Use 1 inch = 2.54 centimeters.

ANSWER _____

- 2** Convert 25.4 centimeters to inches. Use 1 inch = 2.54 centimeters.

ANSWER _____

- 3** Convert 1.2192 meters to feet. Use 1 foot = 0.3048 meter.

ANSWER _____

- 4** Convert 1.8288 meters to yards. Use 1 yard = 0.9144 meter.

ANSWER _____

- 5** Convert 3.218688 kilometers to miles. Use 1 mile = 1.609344 kilometers.

ANSWER _____

- 6** Convert 0.90718474 kilograms to pounds. Use 1 pound = 0.45359237 kilogram.

ANSWER _____

APPLY IT Show your work

- 1** A gaming club needs a 15-foot cable for a tournament setup. How many meters of cable is that, rounded to the nearest tenth? Use 1 foot = 0.3048 meter.

WORK SPACE

ANSWER _____

- 2** During soccer practice, a player kicks a ball 22 yards. How far is this in meters, rounded to the nearest tenth? Use 1 yard = 0.9144 meter.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A fitness app records a hike of 1.25 miles, followed by 900 meters. What is the total distance in kilometers, rounded to the nearest hundredth? Use 1 mile = 1.609344 kilometers.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Convert 8 inches to centimeters. Use 1 inch = 2.54 centimeters.	20.32 centimeters
2	Convert 25.4 centimeters to inches. Use 1 inch = 2.54 centimeters.	10 inches
3	Convert 1.2192 meters to feet. Use 1 foot = 0.3048 meter.	4 feet
4	Convert 1.8288 meters to yards. Use 1 yard = 0.9144 meter.	2 yards
5	Convert 3.218688 kilometers to miles. Use 1 mile = 1.609344 kilometers.	2 miles
6	Convert 0.90718474 kilograms to pounds. Use 1 pound = 0.45359237 kilogram.	2 pounds

PART 2 • APPLY IT

1. **4.6 meters** Multiply 15 by 0.3048 to get 4.572 meters. Round 4.572 to the nearest tenth.
2. **20.1 meters** Multiply 22 by 0.9144 to get 20.1168 meters. Round 20.1168 to the nearest tenth.

CHALLENGE**2.91 kilometers**

Accept equivalent unit names and correct trailing-zero forms, such as 12.70 centimeters for 12.7 centimeters. For rounding items, accept only the requested rounded value.