

Converting Metric Units

Grade 5 Math • Section 8.3

Name: _____

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Quick Review and Helpful Hints

👉 **Metric prefixes (each step is $\times 10$):** kilo- (1,000) → hecto- (100) → deka- (10) → **base unit** → deci- (0.1) → centi- (0.01) → milli- (0.001).

👉 **Common:** 1 km = 1,000 m; 1 m = 100 cm = 1,000 mm; 1 kg = 1,000 g; 1 L = 1,000 mL.

💡 Moving to a **smaller** unit → multiply (decimal moves right). Moving to a **larger** unit → divide (decimal moves left).

🔍 **Example:** Convert 5 cm to meters.

👉 1 m = 100 cm, so divide by 100: $5 \div 100 = 0.05$ m.

💡 **Answer:** 0.05 m

Practice Problems

Convert each measurement.

1. 3 km = _____ m

7. 3.5 L = _____ mL

2. 450 cm = _____ m

8. 9,200 g = _____ kg

3. 2,500 mL = _____ L

9. 1.2 km = _____ m

4. 7 kg = _____ g

10. 750 m = _____ km

5. 60 mm = _____ cm

11. 4.6 kg = _____ g

6. 0.8 m = _____ cm

12. 85 cm = _____ mm

Word Problems

13. A race is 5 km long. A runner has completed 3,200 m. How many meters are left?

14. A water bottle holds 750 mL. How many bottles are needed to fill a 3 L container?



Answer Keys

- 3,000
- 4.5
- 2.5
- 7,000
- 6
- 80
- 3,500

- 9.2
- 1,200
- 0.75
- 4,600
- 850
- 1,800 m
- 4

Step-by-Step Explanations

1. Start with the main idea. For converting metric units, 3 km times 1,000 m per km is 3,000 m. Use the conversion fact first, then decide whether to multiply or divide.

2. Keep the work tidy. For converting metric units, $450 \div 100 = 4.5$ m. Moving from a larger unit to a smaller unit usually makes the number larger.

3. Look at what the numbers mean. For converting metric units, $2,500 \div 1,000 = 2.5$ L. Keep the unit label with the answer so the conversion is complete.

4. Use the setup first. For converting metric units, $7 \times 1,000 = 7,000$ g. Use the conversion fact first, then decide whether to multiply or divide.

5. Check the size of the answer. For converting metric units, $60 \div 10 = 6$ cm. Moving from a larger unit to a smaller unit usually makes the number larger.

6. Match the operation to the words. For converting metric units, $0.8 \times 100 = 80$ cm. Keep the unit label with the answer so the conversion is complete.

7. Write the important values first. For converting metric units, $3.5 \times 1,000 = 3,500$ mL. Use the conversion fact first, then decide whether to multiply or divide.

8. Follow the pattern carefully. For converting metric units, $9,200 \div 1,000 = 9.2$ kg. Moving from a larger unit to a smaller unit usually makes the number larger.

9. Start with the main idea. For converting metric units, $1.2 \times 1,000 = 1,200$ m. Keep the unit label with the answer so the conversion is complete.

10. Keep the work tidy. For converting metric units, $750 \div 1,000 = 0.75$ km. Use the conversion fact first, then decide whether to multiply or divide.

11. Look at what the numbers mean. For converting metric units, $4.6 \times 1,000 = 4,600$ g. Moving from a larger unit to a smaller unit usually makes the number larger.

12. Use the setup first. For converting metric units, $85 \times 10 = 850$ mm. Keep the unit label with the answer so the conversion is complete.

13. Check the size of the answer. For converting metric units, 5 km is 5,000 m, and $5,000 - 3,200 = 1,800$ m. Use the conversion fact first, then decide whether to multiply or divide.

14. Match the operation to the words. For converting metric units, 3 L is 3,000 mL; $3,000 \div 750 = 4$ bottles. Moving from a larger unit to a smaller unit usually makes the number larger.



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