



SKILL 2: Metric Units of Mass and Capacity

The kilogram (kg), gram (g), and milligram (mg) are metric units of mass.

$$1 \text{ kg} = 1,000 \text{ g}$$

$$1 \text{ g} = 1,000 \text{ mg}$$

$$0.001 \text{ kg} = 1 \text{ g}$$

$$0.001 \text{ g} = 1 \text{ mg}$$

The kiloliter (kL), liter (L), and milliliter (mL) are metric units of capacity.

$$1 \text{ kL} = 1,000 \text{ L}$$

$$1 \text{ L} = 1,000 \text{ mL}$$

$$0.001 \text{ kL} = 1 \text{ L}$$

$$0.001 \text{ L} = 1 \text{ mL}$$

Example 1

Convert 2.5 kilograms to grams.

To convert from a larger unit to a smaller unit, multiply.

$$2.5 \times 1,000 = 2,500$$

When converting from kilograms to grams, multiply by 1,000.

So, 2.5 kilograms = 2,500 grams.

Example 2

Convert 43 milliliters to liters.

To convert from a smaller unit to a larger unit, divide.

$$43 \div 1,000 = 0.043$$

When converting from milliliters to liters, divide by 1,000.

So, 43 milliliters = 0.043 liters.

Guided Practice

1. Convert 72 liters to kiloliters.

a. Will you multiply or divide? _____

b. What number will you multiply or divide by? _____

c. 72 liters = _____ kiloliters

Convert.

2. 3,950 milliliters = _____ liters

3. 5.1 kilograms = _____ grams

4. 22,000 liters = _____ kiloliters

5. 95 milligrams = _____ grams

SKILL 2: Practice**Convert.**

- | | |
|-----------------------|------------------------|
| 1. 2,500 g = _____ kg | 2. 0.22 kg = _____ g |
| 3. 8,000 L = _____ kL | 4. 750 mL = _____ L |
| 5. 1.542 kg = _____ g | 6. 6,000 mg = _____ g |
| 7. 5 L = _____ mL | 8. 3.75 L = _____ mL |
| 9. 77 mg = _____ g | 10. 2.21 kg = _____ g |
| 11. 36 mL = _____ L | 12. 0.4 L = _____ mL |
| 13. 600 L = _____ kL | 14. 30 L = _____ mL |
| 15. 2 g = _____ kg | 16. 86 g = _____ mg |
| 17. 0.4 L = _____ mL | 18. 1.75 kL = _____ L |
| 19. 608 g = _____ kg | 20. 20.4 kg = _____ g |
| 21. 0.22 kL = _____ L | 22. 0.059 L = _____ mL |
| 23. 480 mL = _____ L | 24. 15 kL = _____ L |

Solve.

25. Apples cost \$2.20 per kilogram. Samuel needs 500 grams of apples to put in a fruit salad. How much money will he need to buy the apples?

26. A carton of milk has a capacity of 3.5 liters. How many milliliters of milk does the carton hold?

TEST PREP

27. Convert 430 grams to kilograms.

Skill 2

- | | |
|-----------|-------------|
| A 0.43 kg | C 4,300 kg |
| B 43 kg | D 43,000 kg |

28. Convert 8,100 meters to kilometers.

Skill 1

- | | |
|----------|-----------|
| F 810 km | H 8.1 km |
| G 81 km | J 0.81 km |