

Metric Mania

Name KEY

LENGTH:

1. What is the basic unit for length? meter
2. Circle the best unit for measuring each distance:
- Thickness of an eyelash: mm cm m
 - Length of a pencil: cm m km
3. Use a meter stick or metric ruler to find each measurement.
- Width of this page _____ mm or _____ cm
 - Length of an unsharpened pencil _____ cm

METRIC CONVERSIONS
 If: smaller to larger unit
 move decimal left

larger to smaller unit
 move decimal right

4. Convert the following measurements:

- $34 \text{ mm} = \frac{34 \times 10^{-3}}{10^{-2}} \text{ cm} = 3.4 \text{ cm}$ larger
- $3 \text{ km} = \frac{3 \times 10^3}{10^0} \text{ m} = 3000 \text{ m}$ smaller
- $234 \text{ cm} = \frac{234}{10^0} \text{ m} = 2.34 \text{ m}$ larger
- $35 \text{ m} = \frac{35 \times 10^0}{10^{-3}} \text{ mm} = 35000 \text{ mm}$ smaller

MASS:

5. What is the basic unit for mass? gram
6. Circle the best unit for measuring each mass:
- Amount of spices in a batch of cookies: mg g kg
 - Your mass: mg g kg
 - Mass of 10 pennies: mg g kg

7. Use a triple-beam balance to find each measurement.

- Mass of an ink pen _____ g
- Mass of a can of soda _____ g

8. Convert the following measurements:

- $16 \text{ mg} = \frac{16 \times 10^{-3}}{10^{-2}} \text{ g} = 0.016 \text{ g}$ larger
- $4.7 \text{ kg} = \frac{4.7 \times 10^3}{10^0} \text{ g} = 4700 \text{ g}$ smaller
- $12,345 \text{ g} = \frac{12,345}{10^3} \text{ kg} = 12.345 \text{ kg}$ larger
- $2 \text{ g} = \frac{2 \times 10^0}{10^{-3}} \text{ mg} = 2000 \text{ mg}$ smaller

TEMPERATURE:

15. What is the basic unit for temperature? celsius
16. What are the freezing and boiling points for water on this scale? 0°C 100°C
17. Circle the best choice:
- Temperature on a hot summer's day: 0° 35° 90°
 - Room temperature: -20° 0° 20°

18. Convert the following measurements.

- $90^\circ \text{F} = \frac{90 - 32}{1.8} = 32^\circ \text{C}$
- $45^\circ \text{F} = \frac{45 - 32}{1.8} = 7.2^\circ \text{C}$

VOLUME:

19. What is the basic unit for volume? liter

20. Circle the best unit for measuring each volume:

- a. Amount of soda in 1 can: mL OR L
- b. Water in a bathtub: mL L

21. Determine the volume for each object.

NA

- a. Use L x W x H to find the volume of a chalkboard eraser _____ cm³
- b. Use water displacement to find the volume of four marbles
_____ ml or _____ cm³

22. Convert the following measurements:

- a. $160 \text{ mL} = \frac{160 \times 10^{-3}}{10^0} \text{ L} = 0.160 \text{ L}$ larger
- c. $456 \text{ cL} = \frac{456 \times 10^{-2}}{10^{-3}} \text{ mL} = 4560 \text{ mL}$ smaller

- b. $23 \text{ kL} = \frac{23 \times 10^3}{10^0} \text{ L} = 23000 \text{ L}$ smaller
- c. $120 \text{ mL} = \frac{120}{1} \text{ cm}^3$ same

TIME:

23. What is the basic unit for measuring time? second

24. How many seconds are in:

a. 1 minute? 60 s

b. 6 hours? 21,600 s

c. 2 days? 172,800 s

$6 \text{ hr} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{60 \text{ s}}{\text{min}}$

$2 \text{ days} \times \frac{24 \text{ hr}}{\text{day}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{60 \text{ s}}{\text{min}}$

DENSITY:

28. Would the objects with the following densities float, sink, or remain suspended in tap water?

water = 1 g/mL

a. 0.85 g/mL float

b. 1.0 g/mL suspended

c. 1.4 g/mL sink

d. 0.92 g/mL float