

Notes & Steps



Key idea

Metric prefixes scale a unit by powers of 10. **kilo** means 1000 times bigger, **centi** means 100 times smaller, and **milli** means 1000 times smaller.

Steps

1. Decide whether you are changing to a bigger or smaller unit.
2. Use powers of 10: metres ↔ centimetres ↔ millimetres.
3. Multiply when changing to a smaller unit.
4. Divide when changing to a bigger unit.

Common mistake

Going the wrong way with place value. Converting metres to centimetres means multiplying by 100, not dividing by 100.

Key facts

- ▶ 1 km = 1000 m
- ▶ 1 m = 100 cm
- ▶ 1 cm = 10 mm
- ▶ 1 L = 1000 mL
- ▶ 1 kg = 1000 g

Try these

1. Convert 3 km to metres.
2. Convert 250 cm to metres.
3. Convert 4 L to mL.

Notes & Steps



Example 1: km to m

Convert 2.5 km to metres.

$$2.5 \times 1000 = 2500 \text{ m}$$

Example 2: cm to m

Convert 450 cm to metres.

$$450 \div 100 = 4.5 \text{ m}$$

Example 3: L to mL

Convert 1.8 L to mL.

$$1.8 \times 1000 = 1800 \text{ mL}$$

Example 4: reasoning

Which is larger: 0.01 km or 1000 mm?

$$0.01 \text{ km} = 10 \text{ m}, \quad 1000 \text{ mm} = 1 \text{ m}$$

So 0.01 km is larger.