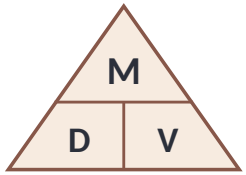
Density: fact sheet

Planner week 18 · Learn these facts

The triangle



Cover the one you want

M = D × V

Density

27 g in 10 cm³

27 ÷ 10 = 2.7 g/cm³

Density = mass ÷ volume

Mass

9 g/cm³, 72 cm³

9 × 72 = 648 g

Mass = density × volume

Volume

12 500 g at 19.3 g/cm³

12 500 ÷ 19.3 = 648 cm³

Volume = mass ÷ density

Key words

- **Density** how much mass in each cm³
- **Mass** how heavy (grams)
- **Volume** space taken up (cm³)
- **g/cm³** grams per cubic centimetre

Exam tips

- Write the triangle: M on top, D and V underneath.
- Change kg to g if density is in g/cm³.
- Work out the volume first if you need it.
- Mixtures: total mass ÷ total volume.
- Round only at the end.
- Write g/cm³ on density answers.

Units

kg → g: × 1000

g/cm³

Match the units first

12.5 kg = 12 500 g

Find the volume

cube: side³

prism: area × length

cylinder: πr²h

Use volume formulas first

Mixtures

add all the masses

÷ total volume

Find each mass first

Units

Mass	g or kg
Volume	cm³ or m³
Density	g/cm³

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Worked example

QUESTION

A block of metal has a mass of 150 g and a volume of 20 cm^3.
Work out the density of the metal.

ANSWER

1. Density = mass ÷ volume

2. = 150 ÷ 20

7.5 g/cm^3

Density = mass ÷ volume.

How to do it

1. Write down what you know: M, D or V.
2. Make the units match (g and cm^3).
3. Find the volume if it is a shape.
4. Use the triangle to pick × or ÷.
5. Give the units.

Model answer:

150 ÷ 20 = 7.5 g/cm^3

Watch out

- Dividing the wrong way round.
- Mixing kg and g.
- Averaging densities in a mixture.