Units and measures: fact sheet

Extra topic (not on the planner) · Learn these facts

Length

km → m (× 1000)

m → cm (× 100)

cm → mm (× 10)

Bigger to smaller: multiply

Smaller to bigger: divide

Mass

1 kg = 1000 g

1 tonne = 1000 kg

0.32 kg = 320 g

Capacity

1 litre = 1000 ml

1 litre = 100 cl

7700 ml = 7.7 litres

Area units

1 m² = 100 × 100

= 10 000 cm²

Square the conversion

Volume units

1 cm³ = 10 × 10 × 10

= 1000 mm³

Cube the conversion

Measuring

lines: from 0 on the ruler

angles: 0 on one arm

Check acute or obtuse

Answer to the nearest mm or degree

Mixed units

3 kg − 2600 g

= 3000 − 2600 = 400 g

Change to the same unit first

Prefixes

kilo	× 1000
centi	÷ 100
milli	÷ 1000

Which sheet do I need?

Converting units ▸
change units: cm, m, kg, litres

Measuring and reading scales ▸
measure, or read a scale

Key words

- **Metric** units based on 10s: mm, cm, m, km
- **Mass** how heavy: g, kg
- **Capacity** how much a container holds: ml, litres
- **Acute / obtuse / reflex** < 90°, 90° to 180°, > 180°

Exam tips

- Big unit to small unit: multiply.
- Small unit to big unit: divide.
- Sense check: there are more cm than m.
- Change everything to the same unit before adding or subtracting.
- Area: square the conversion. Volume: cube it.
- Estimate the angle first, then measure.

Converting units: fact sheet

Units and measures · Extra topic · Learn the method

Worked example

QUESTION

A bag of dog food holds 12 kg. A dog eats 300 g of food each day. How many days will the bag last?

ANSWER

1. Change to the same units: 12 kg = 12 000 g
2. 12 000 ÷ 300

40 days

Change to the same unit, then divide.

How to do it

1. Spot the units in the question.
2. Change them to the same unit.
3. Bigger → smaller: multiply. Smaller → bigger: divide.
4. Do the calculation.
5. Give the units the question asks for.

Model answer:

12 000 ÷ 300 = 40 days

Watch out

- Using 100 g in a kg (it is 1000 g).
- Multiplying when you should divide.
- Rounding up when it says "complete" days or weeks.

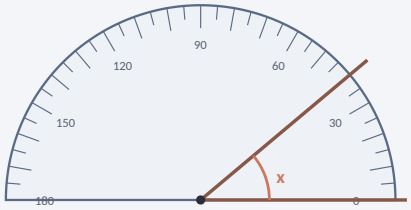
Measuring and reading scales: fact sheet

Units and measures · Extra topic · Learn the method

Worked example

QUESTION

Measure the size of angle x.



ANSWER

1. Put the centre of the protractor on the corner.
2. Line up 0 with one arm of the angle.
3. Count up from 0 on that scale to the other arm.
4. Check: the angle is acute, so it is less than 90°.

$x = 40°$

Line the protractor up carefully and count from zero.

How to do it

1. Estimate first: acute, right, obtuse or reflex?
2. Put the centre of the protractor on the corner.
3. Line up 0° with one arm.
4. Read the scale that starts at 0.
5. Lines: start at 0 on the ruler, give the answer in cm.

Model answer:

$x = 40°$

Watch out

- Reading the wrong scale on the protractor.
- Starting the ruler at 1, not 0.
- An obtuse angle written as acute.