

MATH · Y6

Ratio & Proportion

Knowledge Organiser — Year 6

Key vocabulary

1

Ratio

Compares two or more amounts using : (colon). 3:5 means '3 of one for every 5 of the other'.

2

Proportion

Shows the relationship of a part to the whole, often as a fraction or percentage.

3

Part

Each unit of a ratio. A ratio of 3:5 has 8 parts altogether.

4

Equivalent ratios

Different ratios with the same proportion. $3:4 = 6:8 = 30:40$.

5

Scale

How much a drawing or model is bigger or smaller than reality. A scale of 1:50 means real life is 50 times bigger.

6

Simplify a ratio

Divide both sides by their highest common factor. 12:18 simplifies to 2:3.

Ratio (the 5-step method)

Works for every ratio question

- 1. ADD all the parts of the ratio. (e.g. 3:5 has 8 parts)
- 2. DIVIDE the total amount by the number of parts to find ONE PART.



- 3. MULTIPLY by the number of parts each person gets.
- 4. CHECK by adding all amounts — should give the original total.
- 5. ANSWER what was actually asked (e.g. how much MORE one person gets).
- Example: £40 in ratio 3:5. Total parts = 8. One part = $£40 \div 8 = £5$. So £15 and £25.

Use ratio problems

When you know the difference, no

- If two amounts are in ratio 3:5 and you know the DIFFERENCE is 10, the difference is 2 parts. So 1 part = 5. Numbers are 15 and 25.
- If you know one of the amounts and need to find the other or the total — work out what fraction of the parts you know.
- Bar models help enormously here — see our bar models for ratio resource.
- Common SATs trick: 'There are 28 more boys than girls' tells you the DIFFERENCE in parts, not the total.

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Making things bigger or smaller pr

- A recipe scales proportionally. If 4 people need 200g flour, 6 people need 300g (multiply by 1.5).
- Maps use scales like 1:50,000. 1cm on the map = 50,000cm in real life = 500m.
- When two amounts are in DIRECT PROPORTION, doubling one doubles the other.
- Use a unitary method: find what 1 of something costs/does, then multiply.
- Best buy questions: find cost per unit (e.g. price per 100ml) to compare.

