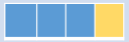
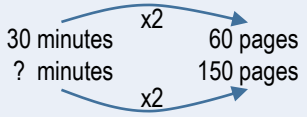
Topic/Skill	Definition/Tips	Example
Ratio	Ratio compares the size of **one part** to **another part**	3:1 
Proportion	Proportion compares the size of the **one part** to the size of the **whole** Usually written as a fraction	In a class with 13 boys and 9 girls, the proportion of boys is $^{13}/_{22}$ and the proportion of girls is $^{9}/_{22}$
Simplifying ratios	**Divide** all parts of the ratio by the **common factor**	5:10 = 1:2 (divide both by 5) 14:21 = 2:3 (divide both by 7)
Connection between ratio and percentages	**Add** both parts of the ratio to get **denominator**. The multiply by 100 to get the **percentage**	3:2 $^{3}/_{5}$ X 100 = 60% $^{2}/_{5}$ X 100 = 40%
Sharing in a ratio	1. **Add** the total parts of the ratio 2. **Divide** the amount to be shared by this value to find the value of one part 3. **Multiply** this value by each part of the ratio Use only if you **know the total**	Share £60 in the ratio of 3:2 3+2=5 60÷5=12 3x12=36, 2x12=24 £36:£24
Proportional Reasoning	Comparing two things using **multiplicative reasoning** and applying this to a new situation. Identify one multiplicative link and use this to find missing quantities	
Unitary Method	Finding the **value of a single unit** and then finding the necessary value by **multiplying** the single unit value	3 cakes require 450g of sugar to make. Find how much sugar is needed to make 5 cakes. 3 cakes = 450g So 1 cake = 150g (÷ by 3) So 5 cakes = 750g (x by 5)
Ration already shared	Find what **one part** of the ratio is worth using the **unitary method**	Money was shared in the ration 3:2:5 between Ann, Bob and Cat. Given that Bob has £16, find out the total amount of money shared. £16 = 2 parts So £8 = 1 part 3 + 2 + 5 = 10 parts, so 8 x 10 = £80
Best buys	Find the **unit cost** by **dividing** the **price by the quantity**. The **lowest** number is the best value.	8 cakes for £1.28 → 16p each (÷ by 8) 13 cakes for £2.05 → 15.8p each (÷ by 13) Pack of 13 cakes is best value

Try these . . .

1. The total cost of 6 identical pens is £3
a) Work out the cost of 1 of these pens.
b) Work out the cost of 5 of these pens

2. Bill makes toy trains and cars. For every train he makes 3 cars. On Monday, he made 7 trains.
a) How many cars did he make?
On Tuesday, he made 27 cars.
b) How many trains did he make?

3. Write each of these ratios in its simplest form.
a) 4 : 12
b) 24 : 32

4. Carlton takes 10 shots in practice for a basketball game. The scores on 6 of these shots. What proportion of his shots does he score?
Give your answer as a percentage

5. There are 27 children in Mrs Rahkit's class. 12 of the children are boys.
Write the ratio number of boys : number of girls
Give your answer in the simplest form

6. Ahmad makes compost by mixing 0.5kg of sand with 2kg of peat.
a) Write the ratio of sand to peat. Give your answer in its simplest form.
b) What percentage of the compost is sand?

7. Ginny makes an orange drink by mixing 2 parts squash with 7 parts water. She has 400ml of squash.
How much orange drink can she make?

8. £240 is split into the ration 5 : 3. what are the two amounts?