




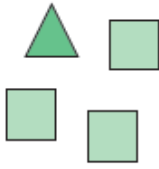


Key vocabulary	Definition
"for every... there are..."	
ratio	Comparison of values of the same kind
proportion	two ratios or fractions are of equal value. 1:3 = 2:6 so they are in proportion, 1/2 = 2/4 so they are in proportion.
part	A section of the whole
whole	Everything - all of it
scale factor	A <u>ratio</u> between two sets of <u>measurements</u>
enlargement	Made larger without changing position or direction
similar	Having the same shape, but not necessarily the same size
length	Distance from one end to the other
width	Distance across, from side to side
perimeter	The length of the distance around the outside of the shape

Ratio Language	The Ratio Symbol
<p>For every 1 circle, there are 2 triangles.</p> 	 <p>The ratio of footballs to rugby balls: 1:4 The ratio of rugby balls to footballs: 4:1</p>
<p>For every 2 bananas, there are 3 apples.</p> 	<p>The ratio of circles to triangles: 2:3 The ratio of triangles to circles: 3:2</p>
<p>For every 1 football, there are 3 rugby balls.</p> 	<p>The ratio of apples to bananas: 1:2 The ratio of bananas to oranges: 2:3 The ratio of apples to bananas to oranges: 1:2:3 The ratio of oranges to bananas to apples: 3:2:1</p>
Ratio and Fractions	
 <p>For every 1 rugby ball, there are 2 footballs. Ratio of rugby balls to footballs: 1:2 $\frac{1}{2}$ of the balls are rugby balls.</p>	
 <p>For every 1 triangle, there are 3 squares. Ratio of triangles to squares: 1:3 $\frac{1}{4}$ of the shapes are triangles.</p>	

Ratio and Proportion Problem-Solving	Scale Factors
<p>To use the ingredients for 1 person, you divide all the quantities by 10 ($\div 10$).</p> <p>Ingredients for Fruit Smoothie (serves 10 people)</p> <ul style="list-style-type: none"> 800g of bananas 500g of strawberries 200g of raspberries 700ml of milk 300ml of natural yogurt <p>To use the ingredients for 5 people, you halve all the quantities ($\div 2$).</p> <p>To use the ingredients for 20 people, you double all the quantities ($\times 2$).</p> <p>In a bag of 15 sweets, there is 1 smiley face sweet for every 4 love heart sweets. Therefore, there will be 3 smiley face sweets and 12 love heart sweets in the bag.</p>	<p>Shape A has been enlarged by a scale factor of 2 to make Shape B.</p> <p>Shape B is now two times as big as Shape A.</p> <p>Shape B has been enlarged from Shape A by a scale factor of 3.</p> <p>Shape B is now three times as big as Shape A.</p>

Prior Knowledge

1:3 "For every 1 blue section, there are 3 white sections"

Ratios can be written as fractions (1/4 is blue, 3/4 are white)

Real Life

- **Cooking.** Pancakes - for every 1 banana, I use 2 eggs and 6 tbps flour
- **When shopping.** If a 100g box of cereal costs £3 and a 200g box of cereal costs £5, the 200g box is the better value because each g of cereal is cheaper.
- **Travelling.** The car was travelling at 60mph (60 miles every hour)
- **Design.** Drawing designs for gardens, houses, furniture

Zooming out...

- **Ancient Egyptians** used ratio when designing The Great Pyramids
- **Ancient Greeks** used ratio when creating sculptures and buildings
- **Ratios** were used (and still are) when designing something before making it (for example a sculpture, a car, a house)