



What should I already know?

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| <ul style="list-style-type: none"> • How to represent sequences in tables and graphs • How to find equivalent Fractions • How to find simple fractions and percentages of amount • How to convert mixed numbers and improper fractions | <ul style="list-style-type: none"> • How to use ratio language • Know how to use the ratio symbol • How to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples • How to solve ratio and proportion problems |
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What will I know by the end of the unit?

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| <ul style="list-style-type: none"> • How to represent a ratio using a diagram • How to use ratio notation • How to solve problems involving ratio's of the form 1:n (or n: 1) • How to solve proportional problems involving the ratio m:n • How to divide a value into a given ratio | <ul style="list-style-type: none"> • How to express ratios in their simplest integer form • How to express ratios in the form 1:n • How to compare ratios and related fractions • Know that π is the ratio between diameter and circumference • Understand the gradient of a line is a ratio |
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Vocabulary

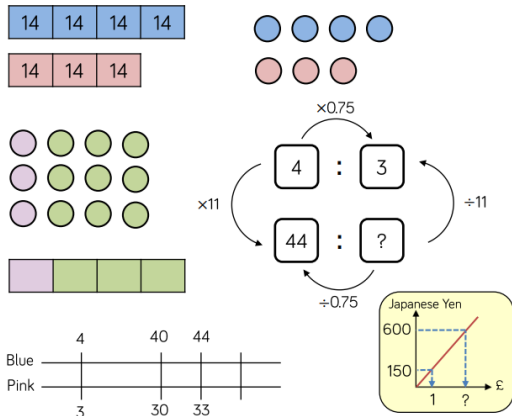
Ratio	is the comparison of two values of the same kind, which may be written as a to b, a:b or as a fraction a/b.	Equivalent ratios	ratios that are in proportion
		Scale	A ratio between two measurements
Proportion	being in proportion means that two ratios or fractions are of equal value.	Common Factors	a whole number that divides two or more other numbers exactly
Order	arrangement according to size, amount or value.	Denominator	the bottom number in a fraction showing the number of parts the whole is divided into
Divide	to divide or division is sharing or grouping a number into equal parts	Numerator	number above the line of a fraction, showing the number of parts of the whole.
Multiply	a mathematical operation where a number is added to itself a number of times.	Fraction	any part of a group, number or whole.
		Share	dividing into equal groups.
Proportional	being in proportion means that two ratios or fractions are of equal value.	Perimeter	distance around the outside of a shape, calculated by adding the length of all sides together.
Place Holder	the zero is called a placeholder. It's not worth anything on its own, but it changes the value of other digits	Diameter	a straight line passing through the centre of a circle to touch both sides of the circumference.
Units	standard amount or quantity.	Circumference	The perimeter of a circle
Multiplier	a mathematical operation where a number is added to itself a number of times.	Regular	regular polygons have all sides equal and all angles equal.
Constant	a quantity having a fixed value that does not change or vary, such as a number.	Pi	the ratio of the circumference of a circle to its diameter, which is approximately 3.14159.
Factors	a whole number that divides exactly into another number.	Steep	the rise or fall of a slope



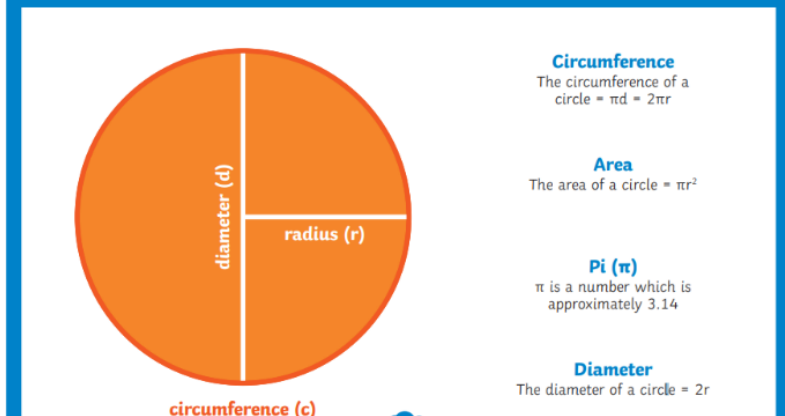
Simplify	To simplify a ratio to its simplest form: to reduce the parts of a ratio the smallest numbers possible.	Gradient	is the steepness and direction of a line as read from left to right.
		Slope	

Diagram/Key Information

Key Representations



The Area and Circumference of a Circle



Investigate/Homework tasks

- Homework will be set from the booklet issued by your teacher
- You should complete at least 30 minutes of maths tasks on Maths Whizz (not games). Please attend help sessions if you do not have access to the internet at home
- Additional work you could complete:
 - Find out more about the meaning of the vocabulary list using <http://www.amathsdictionaryforkids.com/>
- To challenge yourself:
 - Investigate the key questions typed in red text
 - Explain the key questions typed in purple text

Key Questions

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| <ul style="list-style-type: none"> • What is the purpose of a ratio? • Why should the blocks on a bar model be equal size when representing a ratio? • Why is order important in ratio notation? • What does 1:1 mean? • Why are 2:1 and 2:1 different? • In the ratio 1:n which is the bigger part? • Can there be more than two amounts in a ratio? • Does adding one to each part change the ratio? • How do you set up a bar model for a ratio like 3:2? Does the size of the bars matter? • What is the total number of parts? | <ul style="list-style-type: none"> • If a ratio is simplified to the form 1:n, will n always be an integer? • Why is the ratio format 1:n useful for making comparisons? • Which would be larger, a 1:200 scale model or a 1:300 scale model? • What is the same and what is different when we look at a ratio and a fraction? • What's the connection between the sum of the parts of a ratio and it's corresponding fraction? • What the difference between the radius of a circle and it's diameter? |
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| <ul style="list-style-type: none">• Where should you label the question mark in your bar model?• What other information does the bar model tell you?• Why are factors used when simplifying ratio?• What do we mean by common factors?• When might you multiply to simplify a ratio? | <ul style="list-style-type: none">• If I triple the diameter of a circle what will happen to it's circumference?• What does gradient measure?• What happens to the gradient as a line gets steeper?• How is the gradient $\frac{3}{4}$ different to a gradient of $\frac{4}{3}$? |
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