

# FLIGHTPATH

# MATHS

	Year 10	Year 10	Year 10	Year 10	Year 10	Year 10	Year 10	Year 10
	1	2	3	4	5	6	7	8
Number	<p>Understand that halving is the reverse of doubling + and - integers by 10 and 100 and explain the result</p> <p>Round 1 dp numbers to the nearest whole number</p> <p>Understand + and - as they apply to whole numbers</p> <p>Multiply a two-digit number by a single digit number</p> <p>Apply simple tests of divisibility</p> <p>Recognise squares to at least <math>12 \times 12</math></p> <p>Know factors of numbers up to 60</p> <p>Be able to order positive and negative numbers</p> <p>Know what each digit represents in numbers with up to two decimal places and put digits in the correct place in a calculation</p> <p>Work with decimals, money and temperature</p> <p>Read x and y coordinate in all four quadrants</p> <p>Add, subtract multiply and divide integers</p> <p>Illustrate simple fractions by shading (flour on <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>)</p> <p>Start to use simple fractions and percentages</p>	<p>Round decimals to whole numbers and decimal places</p> <p>Multiply and divide decimals by 10, 100, 1000</p> <p>Multiply and divide whole numbers</p> <p>+ and - decimals with up to two places</p> <p>Extend written methods to e.g. <math>36 \times 27</math></p> <p>Know and use the simple order of operations</p> <p>Recognise and use factors, multiples and prime numbers</p> <p>Find the factor pairs for any whole number and identify common multiples</p> <p>Recall known facts for fraction to decimal conversions</p> <p>Convert terminating decimals to fractions, e.g. <math>0.23 = \frac{23}{100}</math></p> <p>Compare decimals in different contexts</p> <p>Calculate simple percentages</p> <p>Know square numbers up to <math>10 \times 10</math></p> <p>Find roots of square numbers up to 100</p> <p>Approximate before carrying out an addition or subtraction</p>	<p>Round numbers to decimals</p> <p>Use symbols <math>\pm</math>, <math>&lt;</math>, <math>=</math>, <math>&gt;</math></p> <p>Multiply and divide 3 digit by 2 digit numbers</p> <p>+ and - simple fractions and those with simple common denominators</p> <p>+ and - with negative integers</p> <p>Multiply decimals by a whole number</p> <p>+ and - decimals with up to two decimal places</p> <p>Begin to + and - simple fractions and those with simple common denominators</p> <p>Simplify fractions</p> <p>Calculate simple fractions of an amount</p> <p>Extend strategies to find any percentage, e.g. finding 10%, 5%, 1% and 2.5%</p> <p>Order fractions, decimals and percentages</p> <p>Use order of operations, including brackets and powers</p> <p>Find factors, multiples, primes and identify common factors and multiples</p> <p>Make estimates and approximations of calculations</p> <p>Use a calculator for simple calculations e.g. <math>(1.4 + 2.8) / (10 - 3)</math></p>	<p>Multiply and divide decimals by whole numbers</p> <p>Be able to + and - any number by 0.1 and 0.01</p> <p>Add, subtract, multiply and divide fractions (proper and improper) and all FDP conversions</p> <p>Add and subtract simple fractions with different denominators including mixed number fractions</p> <p>Multiply a fraction by an integer</p> <p>Estimate answers to calculations involving 2 or more operations and BODMAS</p> <p>Find factors, multiples and primes and find the HCF and LCM of two or more numbers</p> <p>Use division to convert a fraction to a decimal</p> <p>Convert any terminating decimal to a fraction</p> <p>Calculate fractions of quantities and measurements</p> <p>Use the equivalence of fractions, decimals and percentages to compare proportions (i.e. compare a fraction and a percentage)</p> <p>Extend mental calculations to squares, square roots and cubes, cube roots</p> <p>Find roots of non-square numbers using square root key and estimate</p> <p>Square roots of non-square numbers less than 100</p>	<p>Multiply and divide two decimals</p> <p>Add an integer by a fraction</p> <p>Divide, subtract, multiply and divide fractions (proper and improper) and all FDP conversions</p> <p>Order fractions by converting them to decimals or otherwise</p> <p>Write numbers as product of primes</p> <p>Recognise and use relationships between operations, including inverse operations</p> <p>Calculate average speed, distance, time</p> <p>Recall the squares of numbers up to <math>12 \times 12</math></p> <p>Simplify expressions containing powers</p> <p>Establish index laws for positive powers for <math>x</math> and <math>a</math></p> <p>Use an extended range of calculator functions</p>	<p>Find the reciprocal of simple numbers and fractions</p> <p>Use BIDMAS including powers and brackets as part of a</p> <p>Round to an appropriate degree of accuracy (e.g. p.p. or sig fig)</p> <p>Start to use standard form</p> <p>Find the prime factors of a number in index form</p> <p>Find HCF and LCM using Prime Factors</p> <p>Add and subtract fractions including mixed numbers</p> <p>Use the square, cube and power keys on a calculator</p> <p>Estimate answers to calculations by rounding numbers to 1 d.p.</p> <p>Be able to use 4 operations on directed numbers to 1 d.p.</p> <p>Start to work with some simple surds</p> <p>Start to use percentage increase and decrease</p>	<p>Multiply and divide simple fractions (mixed) - positive and negative</p> <p>Convert recurring decimals to fractions and have some understanding of the proof</p> <p>Calculate with roots (surds - exact values)</p> <p>Start to develop an understanding of lower and upper bounds</p> <p>Convert between large and small numbers into standard form and vice-versa</p> <p>Order numbers written in standard index form</p> <p>Add subtract multiply and divide numbers in standard form</p> <p>Confidently recall the laws of indices to multiply and divide numbers written in index notation, including negative power answers and understand that these answers are smaller than 1</p>	<p>4 rules for numbers in standard form</p> <p>Understand recurring decimal to fraction proof</p> <p>Find the value of calculations using indices</p> <p>Understanding fractional and negative indices</p> <p>Understand that the inverse operation of raising a positive number to a power is n raising the result of this operation to the power <math>1/n</math></p> <p>Simplify surd expressions involving squares (e.g. <math>\sqrt{12} = \sqrt{4 \times 3} = 2\sqrt{3}</math>)</p> <p>Use fractions, surds and pi in exact calculations, without a calculator</p>
Algebra	<p>Use letters for unknowns and write an expression</p> <p>Collect single terms together</p> <p>Use basic substitution</p> <p>Use a simple function machine</p> <p>Plot coordinates in the positive quadrant</p> <p>Find the next term in a sequence given the rule</p> <p>Describe simple sequences</p>	<p>Collect simple like terms</p> <p>Substitute positive integers into simple expressions</p> <p>Find the inputs and outputs of function machines expressed in words</p> <p>Begin to construct expressions from worded descriptions, using addition and subtraction e.g. add 7 to number (answer <math>n+7</math>)</p> <p>Plot simple one-step equations</p> <p>Use function machines to generate coordinates</p> <p>Start to use simple notation and symbols correctly</p> <p>Describe and generate sequences given in words (e.g. add 3, multiply by 6, subtract 4)</p> <p>Generate and describe simple sequences - square and triangle numbers</p>	<p>Multiply together two simple algebraic expressions</p> <p>Simplify algebraic expressions by collecting like terms</p> <p>Start to solve simple two-step equations</p> <p>Form simple expressions from worded descriptions</p> <p>Begin to multiply a single term over a bracket</p> <p>Explain the difference between equations and formulae</p> <p>Substitute integers into algebra equations and formulae</p> <p>Find outputs of more complex functions and inputs using inverse operations</p> <p>Read and identify x and y coordinates in all four quadrants</p> <p>Draw label and scale axes</p> <p>Plot and draw graphs of <math>y = a</math>, <math>x = a</math>, <math>y = x</math> and <math>y = -x</math></p> <p>Draw straight-line graphs for real-life situations, read values from the real life graphs</p>	<p>Solve two step linear equations</p> <p>Form expressions using all 4 operations</p> <p>Start to construct equations by linking expressions to given information</p> <p>Substitute positive and negative integers into simple formulae</p> <p>Draw and use graphs to solve distance-time problems.</p> <p>Find the coordinates of points identified by geometrical information in 2D (all four quadrants) for simple shapes e.g. squares and rectangles</p> <p>Plot and draw graphs of straight lines using a table of values in the first quadrant</p> <p>Draw and recognise lines parallel to axes, plus <math>y = x</math> and <math>y = -x</math></p> <p>Generate terms of a linear sequence</p> <p>Begin to use linear expressions to describe the nth term of a simple sequence</p> <p>Draw the next term in a pattern sequence</p> <p>Recognise simple sequences including Fibonacci-type sequences</p> <p>Find a specific term in the sequence</p>	<p>Solve equations with brackets and fractions where the unknown appears on either side or on both sides of the equation.</p> <p>Expand and simplify brackets</p> <p>Simplify simple algebraic fractions</p> <p>Construct and solve simple equations</p> <p>Substitute integers into more complex formulae including squares and cubes</p> <p>Expand and simplify more complex brackets</p> <p>Factorise an expression with more than 1 factor</p> <p>Rearrange simple equations</p> <p>Plot the graphs of linear functions</p> <p>Find the gradient of a line and identify parallel lines from their equations</p> <p>Use two-way tables</p> <p>Sketch and interpret real-life graphs (water flowing into vessels)</p> <p>Find the coordinates of the midpoint of a line from a given graph</p> <p>Plot the graphs of simple linear functions in the form <math>y = mx + c</math> in four quadrants</p> <p>Recognise that equations of the form <math>y = mx + c</math> correspond to straight-line graphs</p> <p>Begin to use formal algebra to describe the nth term in an arithmetic sequence</p> <p>Find a specific term in the sequence</p>	<p>Solve equations which include brackets, negatives, fractions and those with negative solutions</p> <p>Derive a simple formula</p> <p>+ and - simple algebraic fractions</p> <p>Substitute positive and negative integers into expressions involving powers</p> <p>Expand and simplify more complex brackets</p> <p>Factorise an expression with more than 1 factor</p> <p>Rearrange simple equations</p> <p>Plot the graphs of linear functions</p> <p>Find the gradient of a line and identify parallel lines from their equations</p> <p>Draw and recognise a quadratic graph</p> <p>Calculate the midpoint of a line segment</p> <p>Argue mathematically that algebraic expressions are equivalent e.g. <math>2(x+3) - 4(x-2) + 6(x-1)</math></p> <p>Find and use the nth term of an arithmetic sequence</p> <p>Simplify simple expressions involving index notation</p> <p>Factorise an expression e.g. <math>6x + 8y - 23z + 4b</math></p> <p>Change the subject of a formula in one and two steps</p>	<p>Confidently solve two equations which involve brackets, negatives, fractions and those with negative solutions</p> <p>Simple change the subject of a formula where the subject is on both sides</p> <p>Expand and simplify brackets</p> <p>Identify the gradient from an equation and write down the equation of a line parallel to the equation of a straight line from its gradient</p> <p>Identify the equation of a straight line from its gradient</p> <p>Expand and simplify more complex brackets</p> <p>Factorise an expression with more than 1 factor</p> <p>Rearrange simple equations</p> <p>Plot the graphs of linear functions</p> <p>Find the gradient of a line and identify parallel lines from their equations</p> <p>Draw and recognise a quadratic graph</p> <p>Calculate the midpoint of a line segment</p> <p>Argue mathematically that algebraic expressions are equivalent e.g. <math>2(x+3) - 4(x-2) + 6(x-1)</math></p> <p>Find and use the nth term of an arithmetic sequence</p> <p>Simplify simple expressions involving index notation</p> <p>Factorise an expression e.g. <math>6x + 8y - 23z + 4b</math></p> <p>Change the subject of a formula in one and two steps</p>	<p>Change the subject of a formula where the subject is on both sides</p> <p>Solve quadratic equations algebraically by factorising</p> <p>Solve quadratic equations arising from algebraic fractions</p> <p>Find the gradient of a straight line from its equation. deduce the turning point and sketch the corresponding graph</p> <p>Solve simple quadratic equations by using the quadratic formula</p> <p>Simplify and manipulate algebraic expressions involving surds and algebraic fractions</p> <p>Find the equation of the line through two given points</p> <p>Solve quadratic inequalities in one variable, by factorising, and sketching the graph to find critical values</p> <p>Plot graphs of the exponential function <math>y = a^x</math></p> <p>Begin to recognise, sketch and interpret graphs of trigonometric functions</p> <p>Interpret coordinates for trigonometric graphs</p> <p>Find the gradient of a straight line from its equation</p> <p>Estimate the gradient of a quadratic or non-linear graph at a given point by constructing the tangent and finding its gradient</p> <p>Estimate area under a quadratic graph by shading it into trapezia</p> <p>Find foci, g.c.s., D.C.s, E.C.s, asymptotically</p>
Probability and Statistics	<p>Use a tally chart</p> <p>Find the mode, median and range of a small set of data.</p> <p>Draw a simple bar chart</p> <p>Start to understand and apply the probability scale</p> <p>Sort using Venn diagrams</p>	<p>Use a probability scale with words.</p> <p>Mark probabilities on the probability scale</p> <p>Represent data in a table</p> <p>Draw and interpret line graphs, pictograms and bar charts</p> <p>Find the mode median mean and range for a small set of data</p> <p>Compare two simple distributions using the range and the mode</p> <p>Find the mode and range from a bar chart</p> <p>Interpret simple pie charts using simple fraction sections</p> <p>Start to solve simple problems using sets and Venn diagrams</p>	<p>Use the vocabulary of probability and understand and use probability scale from 0 to 1</p> <p>Understand that the probabilities of a set of outcomes sum to 1</p> <p>Identify all mutually exclusive outcomes of an event</p> <p>Extract data and interpret frequency tables</p> <p>Design &amp; use data collection sheets for grouped data</p> <p>Group data in equal class intervals</p> <p>Choose a suitable graph to represent data</p> <p>Confidently draw and interpret simple diagrams and charts including: line graphs stem and leaf and dual bar charts</p> <p>Draw scatter graphs</p> <p>Use information provided to complete a two-way table</p> <p>Find the mode and total frequency from a pie chart</p> <p>Calculate the mean, mode, median and range of a set of data</p> <p>Solve questions using sets and Venn diagrams</p>	<p>Know that if the probability of an event is p, the probability of it not occurring is 1-p</p> <p>Estimate the number of times an event will occur, given the probability and the number of trials</p> <p>Compare experimental and theoretical probabilities</p> <p>Find the probability of an event happening using relative frequency</p> <p>Record outcomes of events in tables and grids</p> <p>Write probabilities in words, fractions, decimals and percentages</p> <p>Interpret pie charts and line graphs taking into account different sized samples</p> <p>Construct simple line graphs for time series</p> <p>Solve questions involving simple sets by drawing Venn diagrams</p>	<p>Calculate the probability of mutually exclusive events.</p> <p>Record outcomes of probability experiments in tables and use and draw simple space diagrams</p> <p>Use two-way tables</p> <p>Identify which graphs are the most useful in the context of the problem, including stem and draw and interpret stem and leaf and scatter diagrams</p> <p>Use two-way tables</p> <p>Calculate the mean and range from a frequency table</p> <p>Calculate mean, median, mode and range from a list</p> <p>Understand and use sets and Venn diagrams, including 3 way Venn diagrams</p> <p>Draw and interpret pie charts</p> <p>Interpret composite bar charts</p>	<p>Record outcomes of events in a Venn diagram</p> <p>Find a missing probability from a list or table</p> <p>Draw a stem and leaf diagram and find the median, mode and range</p> <p>Recognise the advantages and disadvantages between measures of average</p> <p>Draw a scatter graph, recognise and interpret correlation and draw and use a line of best fit to make predictions</p> <p>Plan a statistical survey</p> <p>Understand different types of data collection</p>	<p>Use Venn diagrams to solve problems</p> <p>Draw and complete a probability tree diagram based on given information (no more than a pair of 3 branches per event)</p> <p>Use the 'and' and 'or' rule to find probabilities of events</p> <p>Construct cumulative frequency tables and draw the corresponding curve</p> <p>Draw box plots and find the median, quartiles, range and interquartile range.</p> <p>Do simple questions with moving averages</p>	<p>Understand conditional probabilities and decide if two events are independent</p> <p>Use tree diagrams to calculate the probability of two independent events</p> <p>Draw a cumulative frequency graph and use it to estimate frequency greater/less than a given value</p> <p>Compare the measures of spread between a pair of box plots/CF graphs</p> <p>Find the median, quartiles and interquartile range for large data sets with grouped data</p> <p>Compare the mean, median, mode and range as appropriate of two distributions</p> <p>Select and justify a sampling method to investigate a population, including random and stratified sampling</p> <p>Start to understand how to construct a histogram</p>
Geometry	<p>Start to know the properties of simple shapes</p> <p>Measure a line and read from simple scales to 1 d.p.</p> <p>Use a protractor to measure acute angles</p> <p>Understand the meaning of parallel and perpendicular lines</p> <p>Find the perimeter of a simple shape by calculation</p> <p>Recognise and draw lines of symmetry for simple shapes</p> <p>Know how many degrees are in a right angle</p>	<p>Measure lines to the nearest millimetre</p> <p>Use a protractor to measure acute angles</p> <p>Tessellate shapes</p> <p>Know the sum of angles round a point, on a straight line and in a triangle</p> <p>Draw parallel lines and identify parallel lines on a diagram</p> <p>Calculate the perimeter of a square/rectangle</p> <p>Identify and name common solids: cube, cuboid, cylinder, prism, pyramid, sphere and cone</p> <p>Know the terms face, edge and vertex</p> <p>Understand that area is measured in <math>cm^2</math></p> <p>Choose suitable metric units to estimate length and area.</p> <p>Begin to construct triangles given ASA</p> <p>Recognise reflection symmetry and visualise the reflection in a mirror line of a 2-D shape</p> <p>Translate a shape on a square/coordinated grid</p> <p>Understand and use the language associated with rotations</p>	<p>Estimate the size of angles and distinguish between acute, obtuse and reflex angles</p> <p>Use a protractor to measure and draw acute, obtuse and reflex angles</p> <p>Tessellate combinations of shapes</p> <p>Use correct notation for labelling angles</p> <p>Identify simple properties of triangles and some quadrilaterals</p> <p>Measure shapes to find perimeters and areas</p> <p>Calculate the perimeter of compound shapes</p> <p>Use the formulae for the area of a rectangle, square, parallelogram and triangle</p> <p>Know and use the units of area</p> <p>Use nets to calculate the surface area of simple cuboids</p> <p>Find the volume of a simple cuboid</p> <p>Identify different nets of a cuboid</p> <p>Estimate real life measurements to a suitable degree of accuracy</p> <p>Know and use measurement to estimate and solve problems in everyday contexts</p> <p>Construct triangles given SAS</p> <p>Recognise and visualise the line and rotational symmetry of a 2-D shape</p> <p>Rotate a shape about a given point</p>	<p>Use a protractor to draw and measure angles</p> <p>Recognise parallel and perpendicular lines in all diagrams</p> <p>Recognise and find vertically opposite angles</p> <p>Find missing angles around a point and in a triangles and quadrilaterals</p> <p>Calculate perimeter and area of compound shapes made from triangles, rectangles and other shapes</p> <p>Calculate the surface area of simple cuboids and cuboids</p> <p>Construct simple nets of 3D shapes</p> <p>Begin to use plans and elevations</p> <p>Solve simple problems involving units of measurement in the context of length and area</p> <p>Identify regular and irregular polygons</p> <p>Recognise and visualise the rotational symmetry of 2-D shapes</p> <p>Draw or complete diagrams with a given number of lines of symmetry or rotational symmetry</p> <p>Recognise and visualise the line and rotational symmetry of a 2-D shape</p> <p>Identify the lines and rotational symmetry of a 2-D shape</p> <p>Rotate a shape about a given point</p>	<p>Find missing angles in triangles and quadrilaterals and give reasons for your answers</p> <p>Recognise alternate, opposite and corresponding angles on parallel lines and their values.</p> <p>Use formulae to calculate the area of squares, rectangles, triangles, trapezia and parallelograms</p> <p>Calculate areas of compound shapes</p> <p>Know the formulae for the volume of a cube and cuboid</p> <p>Identify simple nets of 3D shapes - regular polyhedra</p> <p>Construct the perpendicular bisector of a line segment</p> <p>Perform and describe a rotation, reflection, translation and simple enlargement.</p> <p>Solve harder problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons - by looking at several shapes together</p> <p>Use plans and elevations</p> <p>Perform and describe a rotation, reflection, translation and simple enlargement</p> <p>Use simple scale drawings to solve problems</p> <p>Start to have an understanding of bearings</p>	<p>Solve problems involving bearings</p> <p>Recall the sum of the exterior angles of any polygon</p> <p>Calculate the interior angles of regular polygons</p> <p>Know the names of parts of a circle</p> <p>Know and use formulae for the circumference and area of a circle</p> <p>Calculate surface area and volume of shapes made from cuboids</p> <p>Calculate the volume and surface area of right prisms and cylinders</p> <p>Use the information given to determine whether triangles are congruent, or similar</p> <p>Construct triangles and bisectors of lines and angles</p> <p>Identify simple nets of 3D shapes</p> <p>Draw plans and elevations of 3-D shapes</p> <p>Perform and describe a rotation, reflection, translation and simple enlargement (including the centre of enlargement and fractional scale factor)</p> <p>Identify 2-D shapes, given a centre of enlargement and a positive whole number scale factor</p> <p>Use Pythagoras' Theorem on simple problems</p>	<p>Use the sum of the interior angles of an n-sided polygon to find missing angles in problems</p> <p>Find the size of interior angle, exterior angle or the number of sides of a regular polygon</p> <p>Find the surface area of simple prisms</p> <p>Calculate the lengths and areas given the volumes in right prisms and cylinders</p> <p>Use similarity to solve problems to 2D shapes</p> <p>Use the formulae for length of arcs in a circle.</p> <p>Use the formulae for area of sectors in a circle.</p> <p>Perform and describe combinations of rotations, reflections and translations</p> <p>Use ruler and compasses to construct bisectors, triangles and angles of enlargement (including the centre of enlargement and fractional scale factor)</p> <p>Use SOI to solve problems</p> <p>Use and apply Pythagoras' Theorem to solve problems</p> <p>Use Pythagoras' Theorem to justify if a triangle is right-angled given its three lengths</p> <p>Use the sine, cosine and tangent ratios to find the lengths of unknown sides in a right-angled triangle.</p> <p>Use vector notation for translations</p>	<p>Find the surface area and volumes of cuboids, cylinders, cones, pyramids, spheres, hemispheres, hemispheres and compound shapes made from them</p> <p>Find areas and volumes of similar shapes</p> <p>Use trigonometry to solve problems</p> <p>Find angles of elevation and angles of depression</p> <p>Complete a formal geometric proof of similarity of two given triangles</p> <p>Find the area of a simple segment</p> <p>Add and subtract vectors</p> <p>Use the formulae for length of arcs and area of sectors of circles to solve problems.</p>
Ratio, proportion and rates of change	<p>Work with basic ratio</p> <p>Start to solving simple problems involving proportion</p> <p>Draw simple scale diagrams using integer scale factor</p>	<p>Convert fractions to percentages</p> <p>Begin to simplify ratios</p> <p>Convert lengths from simple scale drawings to real life</p> <p>Express one number as a fraction of another</p> <p>Solve simple direct proportion questions</p>	<p>Convert a larger whole number metric unit to a smaller unit (e.g. 3 kilograms to 3000 grams)</p> <p>Start to use scale drawings with decimals</p> <p>Express one number as a fraction of another</p> <p>Use percentages to compare simple proportions</p> <p>Use ratio notation</p> <p>Reduce a ratio to its simplest form</p>	<p>Convert between simple metric units.</p> <p>Express the division of a quantity into a number of parts as a ratio and simplify (including 3 part)</p> <p>Recall basic equivalent fractions, decimals and percentages</p> <p>Express one number as a percentage of another</p> <p>Find a percentage of a quantity using a multiplier</p> <p>Use the unitary method to solve simple word problems involving ratio and direct proportion</p> <p>Use a ratio to find one quantity when the other is known</p> <p>Use strategies for finding equivalent fractions, decimals and percentages</p> <p>Find percentage increase and decrease</p>	<p>Solve a ratio problem in context</p> <p>Divide a given quantity into a ratio</p> <p>Write a ratio as a fraction</p> <p>Recognise graphs showing constant rates of change.</p> <p>Begin to solve problems involving the unitary method, e.g. if £40 is 60%, find 1% by dividing by 60 and then 100% by multiplying by 100.</p> <p>Compare two quantities using percentages, including a range of 2-D situations and contexts</p> <p>Use percentages in real-life situations</p> <p>Use and interpret maps, using map scales (1 : 25 000)</p>	<p>Interpret and write ratios to describe a situation</p> <p>Compare proportions using percentages</p> <p>Use algebraic methods to solve problems involving variables in direct proportion</p> <p>Set up simple equations for quantities in direct proportion</p>	<p>Write a ratio as a linear function</p> <p>Use graphs to calculate measures including unit price</p> <p>Use algebraic methods to solve problems involving variables in direct proportion</p> <p>Use percentages in real-life situations: compound interest, depreciation, percentage profit and loss</p> <p>Calculate repeated proportional change</p> <p>Find the original amount given the final amount after a percentage change (reverse percentages)</p> <p>Identify the scale factor of an enlargement as the ratio of the lengths of any two corresponding line segments</p> <p>Enlarge 2-D shapes and recognise the similarity of resulting shapes and understand the implications of enlargement for perimeter</p>	<p>Solve problems involving inverse proportion</p> <p>Use velocity-time graphs to calculate acceleration</p> <p>Solve problems involving inverse proportionality, including problems where y is inversely proportional to the square of x</p> <p>Calculate an unknown quantity from direct or inverse proportion</p> <p>Set up and use equations to solve word or other problems involving direct or inverse proportion</p> <p>Calculate the new area or volume of a shape after enlargement</p>