KS3 Assessment Criteria: Maths

	Flight Path 1: GCSE grades 1 and above	Flight Path 2: GCSE grades 2 and above	Flight Path 3: GCSE grades 4 and above	Flight Path 4: GCSE grades 6 and above
Year 7	• read and use calendars • read and use 12-hour and 24-hour clocks • convert between the 12-hour and 24-hour systems • work out everyday money problems • use a number line order positive and negative whole numbers • solve problems involving negative temperatures • carry out additions and subtractions involving negative numbers • use function machines generate inputs and outputs • recognise, describe and write down sequences that are based on a simple rule • find missing terms in a sequence • introduce the sequence of square and triangular numbers • work out the perimeter and area of a rectangle • multiply and divide decimal numbers by 10, 100 and 1000 • order decimal numbers according size • estimate calculations in order spot possible errors • add and subtract decimal numbers • be able multiply and divide decimal numbers by any whole number • recognise and use square numbers up 225 (15×15) • round numbers the nearest whole number, 10, 100 or 1000 • use the conventions of BIDMAS carry out calculations • choose a written method for multiplying and dividing two numbers • use written methods carry out divisions accurately • convert between common metric units • use measurements in calculations • recognise and use appropriate metric units • understand the meaning of mode, median and range • read data from tables and charts • create and use a tally chart • understand and use grouped frequency • gain a greater understanding of data collection • use algebra write simple expressions • substitute numbers into expressions work out their value • learn the rules for simplifying expressions • use and write formulae • find simple equivalent fractions • write fractions in their simplest form • compare and order two fractions • add and subtract fractions with the same denominators • convert mixed numbers improper fractions and vice versa • add and subtract simple mixed numbers with the same denominators • use a compass to give directions • know the different types of angles	• read and use 12-hour and 24-hour clocks • convert between the 12-hour and 24-hour systems • work out everyday money problems • solve problems involving negative temperatures • carry out additions and subtractions involving negative numbers • use function machines generate inputs and outputs • recognise, describe and write down sequences that are based on a simple rule • find missing terms in a sequence • introduce the sequence of square and triangular numbers • work out the perimeter and area of a rectangle • multiply and divide decimal numbers by 10, 100 and 1000 • order decimal numbers according size • estimate calculations in order spot possible errors • add and subtract decimal numbers • be able multiply and divide decimal numbers by any whole number • recognise and use square numbers up 225 (15×15) • round numbers the nearest whole number, 10, 100 or 1000 • use the conventions of BIDMAS carry out calculations • choose a written method for multiplying and dividing two numbers • use written methods carry out divisions accurately • convert between common metric units • use measurements in calculations • recognise and use appropriate metric units • understand the meaning of mode, median and range • read data from tables and charts • create and use a tally chart • understand and use grouped frequency • gain a greater understanding of data collection • use algebra write simple expressions • substitute numbers into expressions work out their value • learn the rules for simplifying expressions • use and write formulae • find simple equivalent fractions • write fractions in their simplest form • compare and order two fractions • add and subtract fractions with the same and different denominators • convert mixed numbers improper fractions and vice versa • add and subtract simple mixed numbers with the same and different denominators • use a compass to give directions • know the different types of angles • use a protractor measure and draw an angle • calculate angles at a point, on a line, opposite angles	• carry out calculations from information given in tables and charts • understand and use the symbols < (less than) and > (greater than) • carry out additions and subtractions involving negative numbers • use function machines generate inputs and outputs • recognise, describe and generate sequences that use a simple rule • find missing terms in a sequence • know and understand the sequences of numbers known as the square and triangular numbers • use a simple formula calculate the perimeter and area of a rectangle and of a compound shape • work out the volume of a cube and cuboid, using a simple formula • work out the capacity of a cube or cuboid • be able multiply and divide decimal numbers by 10, 100 and 1000 • be able order decimal numbers according size • estimate calculations in order spot possible errors • be able to calculate with decimal numbers • recognise and use square numbers up 225 (15×15) and the corresponding square roots • round numbers a given degree of accuracy • use the conventions of BIDMAS carry out calculations • choose a written method for multiplying and dividing two numbers • convert between common metric units • use measurements in calculations • recognise and use appropriate metric units • understand and calculate the mean mode, median and range of data • be able read and interpret different statistical diagrams • create and use a tally chart • understand and use grouped frequencies • use algebra write simple expressions • substitute numbers into expressions work out their value • find simple equivalent fractions • write fractions in their simplest form • compare and order two fractions • add and subtract fractions with the same and different denominators • convert mixed numbers improper fractions and vice versa • add and subtract simple mixed numbers with the same denominator • use a protractor measure and draw an angle • calculate angles at a point, on a straight line, opposite angles	• carry out calculations from information given in tables and charts • understand and use financial language • understand and use the symbols < (less than) and > (greater than) • use function machines generate inputs and outputs • use given inputs and outputs work out a function • recognise, describe and generate sequences that follow a simple rule • work out missing terms in a sequence • work out the *n*th term and use the *n*th term work out any term in a sequence • know and understand the square and triangular number sequences, the Fibonacci sequence and Pascal's triangle • work out the perimeter and the area of a compound shape, a triangle, parallelogram, trapezium • work out the volume and surface area of cubes and cuboids • be able multiply and divide decimal numbers by 10, 100, 1000 and 10 000 • order decimal numbers according size • estimate calculations in order spot possible errors. • round up or down, one decimal place • be able add and subtract, multiply and divide with decimal numbers • recognise and use square numbers up 225 (15×15) and the corresponding square roots • round numbers more than one decimal place (dp) and one or two significant figures (sf) • use the conventions of BIDMAS carry out calculations • use written methods carry out calculations involving decimals accurately • convert between common metric units • understand and calculate the mean, mode, median and range of data • be able read and interpret different statistical diagrams • understand continuous data and use grouped frequency • use algebra write simple expressions and recognise equivalent expressions • substitute numbers in expressions work out their value • learn how simplify expression, use formulae, write formulae • find equivalent fractions, write fractions in their simplest form • compare and order two fractions • add and subtract fractions with different denominators • convert mixed numbers improper fractions and vice versa • add and subtract simple mixed numbers with different denominators

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	• use a protractor measure and draw an angle • calculate angles at a point, on a line, opposite angles • understand the properties of parallel, intersecting and perpendicular lines • understand and use the properties of triangles and quadrilaterals • understand and use coordinates locate points • work out coordinates from a rule • draw a graph for a simple rule • learn how graphs can be used represent real-life situations • understand the equivalence between some simple fractions and percentages • find a fraction of a quantity • find a percentage of a quantity • write a percentage as a decimal • use a calculator find a percentage of a quantity • work out the result of a simple percentage change • learn and use words about probability • learn about and use probability scales • work out probabilities based on equally likely outcomes • learn about and understand experimental probability • understand the difference between theoretical probability and experimental probability • recognise shapes that have reflective symmetry • draw lines of symmetry on a shape • recognise shapes that have rotational symmetry • find the order of rotational symmetry for a shape • use a coordinate grid reflect shapes • understand how tessellate shapes • find missing numbers in simple calculations • solve equations involving one operation • read data from pie charts, where the data is given in simple sectors • use the median and range compare data • make sensible decisions by comparing the median and range of two sets of data • use charts and diagrams interpret data • know how count the faces, vertices and edges on a 3D shape • draw nets for 3D shapes and construct 3D shapes from nets • work out the rule connecting faces, edges and vertices of 3D shapes • introduce ratio notation • use ratios compare quantities • write a ratio as simply as possible • understand the connection between fractions and ratios	• understand the properties of parallel, intersecting and perpendicular lines • understand and use the properties of triangles and quadrilaterals • understand and use coordinates locate points • work out coordinates from a rule • draw a graph for a simple rule • learn how graphs can be used represent real-life situations • understand the equivalence between some simple fractions and percentages • find a fraction of a quantity • find a percentage of a quantity • write a percentage as a decimal • use a calculator find a percentage of a quantity • work out the result of a simple percentage change • learn and use words about probability • learn about and use probability scales • work out probabilities based on equally likely outcomes • learn about and understand experimental probability • understand the difference between theoretical probability and experimental probability • recognise shapes that have reflective symmetry • draw lines of symmetry on a shape • recognise shapes that have rotational symmetry • find the order of rotational symmetry for a shape • use a coordinate grid reflect shapes • understand how tessellate shapes • find missing numbers in simple calculations • solve equations involving one and two operations • use algebra set up and solve equations • read data from pie charts, where the data is given in simple sectors • use the median and range compare data • make sensible decisions by comparing the median and range of two sets of data • use charts and diagrams interpret data • know how count the faces, vertices and edges on a 3D shape • draw nets for 3D shapes and construct 3D shapes from nets • work out the rule connecting faces, edges and vertices of 3D shapes • introduce ratio notation • use ratios compare quantities • write a ratio as simply as possible • use ratios find missing quantities • understand the connection between fractions and ratios	• know that the sum of the angles in a triangle is 180°, in a quadrilateral is 360° • understand the properties of parallel, intersecting and perpendicular lines • understand and use the properties of triangles and quadrilaterals • understand and use coordinates locate points in all four quadrants • draw a graph for a simple relationship • recognise and draw line graphs with fixed values of *x* and *y* • recognise and draw lines of the form $x = ax$ *and* $x + y = a$ • draw and use real-life graphs • understand the equivalence between a fraction, a decimal and a percentage • find a fraction and percentage of a quantity • use a calculator find a percentage of a quantity • work out the result of a simple percentage change • learn and use the correct words about probability • work out probabilities based on equally likely outcomes • understand the difference between theoretical probability and experimental probability • recognise shapes with reflective symmetry • recognise shapes that have rotational symmetry • use coordinates reflect shapes in all four quadrants • understand how tessellate shapes • find missing numbers in simple calculations • understand what an equation is • solve equations involving one and two operations • use algebra set up and solve equations • read data from pie charts in which the data is given as percentages • use the mean and range compare data • make sensible decisions by comparing the mean and range of two sets of data • use charts and diagrams interpret data • be familiar with the names of 3D shapes and their properties • use isometric paper draw shapes made from cubes • draw nets of 3D shapes and construct 3D shapes from nets • make the connection between faces, edges and vertices of some 3D shapes • use ratio notation. Use ratio compare quantities • write a ratio as simply as possible • use ratios find totals or missing quantities • understand the connections between fractions and ratios • understand how ratios can be useful in everyday life	• understand the properties of parallel, intersecting and perpendicular lines • calculate angles around a point, on a straight line, opposite angle, angles in parallel lines • know that the sum of the angles in a triangle is 180°, in a quadrilateral is 360° • understand and use the properties of triangles and quadrilaterals • understand and use coordinates locate points in all four quadrants • understand the connection between pairs of coordinates and the relationship shown in an equation and a graph • recognise and draw line graphs with fixed values of *x* and *y* • recognise and draw graphs of $y = x$ and $y = –x$, $x + y = a$ • draw and use real-life graphs • understand the equivalence between a fraction, a decimal and a percentage • work out a fraction and percentage of a quantity with and without using a calculator • know when it is appropriate use a calculator • work out the result of a percentage change • use sample space diagrams work out the probability of a combined event • understand the difference between theoretical probability and experimental probability • use coordinates reflect shapes in all four quadrants • understand how rotate a shape • understand how tessellate shapes • solve equations involving one and two operations • use algebra set up and solve equations • use a scaling method draw a pie chart • read and interpret data from pie charts • use averages and range compare data • carry out a statistical survey • use charts and diagrams interpret data and then write a report • use isometric paper draw shapes made from cubes.. • Draw nets of 3D shapes; construct 3D shapes from nets including more complex shapes • understand the relationship between faces, edges and vertices for 3D shapes • solve problems involving 3D shapes • use ratio compare quantities • write a ratio as simply as possible with whole numbers • write ratios in the form 1 : *x* where *x* could be a decimal. • write ratios compare more than two items • understand the connections between fractions and ratios • understand how ratios can be useful in everyday life

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	Flight Path 1: GCSE grades 1 and above	Flight Path 2: GCSE grades 2 and above	Flight Path 3: GCSE grades 5 and above	Flight Path 4: GCSE grades 6 and above
Year 8	• carry out additions and subtractions involving negative numbers • carry out multiplications and divisions involving negative numbers • understand and use highest common factors and lowest common multiples • understand and use squares and square roots • understand and use cubes and cube roots • understand what prime numbers are and find the prime numbers of an integer • identify parallel lines • identify perpendicular lines • know that the sum of the angles in a triangle is 180° • know that the sum of the angles in a quadrilateral is 360° • understand how translate a point or a shape • understand how rotate a shape • use a probability scale represent a chance • collect data and use it find probabilities • decide if an event is fair or biased • use sample spaces calculate probabilities • calculate probabilities from experiments • write one quantity as a percentage of another • calculate the result of a percentage increase or decrease • use algebra with function machines • use a formula work out the area of a rectangle • work out the area of a compound shape • use a formula work out the area of a triangle • work out the area of a parallelogram • recognise patterns with coordinates • draw graphs of linear rules • read and draw distance–time graphs • multiply and divide by 100 and 1000 • round numbers one decimal place • round large numbers • round one significant figure • use rounding estimate rough answers calculations • solve problems with decimal numbers • revise reading from charts and tables • interpret a pie chart • use a scaling method draw pie charts • read scatter graphs • simplify algebraic expressions involving the four basic operations • simplify algebraic expressions by combining like terms • recognise congruent shapes • use ratio compare lengths and areas of 2D shapes • understand and use scale diagrams • multiply a fraction or a mixed number by an integer • multiply by a power of ten mentally • mentally divide by a power of 10 • understand the meaning of direct proportion	• carry out additions and subtractions, multiplications and divisions involving negative numbers • understand and use highest common factors and lowest common multiples • understand and use squares and square roots • understand and use cubes and cube roots • understand what prime numbers are and find the prime numbers of an integer • identify parallel lines • identify perpendicular lines • know that the sum of the angles in a triangle is 180° • know that the sum of the angles in a quadrilateral is 360° • understand how translate a point or a shape • understand how rotate a shape • use a probability scale represent a chance • collect data and use it find probabilities • decide if an event is fair or biased • recognise mixed events where you can distinguish different probabilities • use sample spaces calculate probabilities • calculate probabilities from experiments • write one quantity as a percentage of another • calculate the result of a percentage increase or decrease • work out a change of value as a percentage increase or decrease • know and understand the Fibonacci sequence • use algebra with function machines • use the *n*th term of a sequence • use a formula work out the area of a rectangle • work out the area of a compound shape • use a formula work out the area of a triangle • work out the area of a parallelogram • recognise patterns with coordinates • draw graphs of linear rules • recognise and draw the graph from a simple quadratic equation • read and draw distance–time graphs • multiply and divide by 100 and 1000 • round numbers one decimal place • round large numbers • round one significant figure • use rounding estimate rough answers calculations • solve problems with decimal numbers • revise reading from charts and tables • interpret a pie chart • use a scaling method draw pie charts • read scatter graphs • simplify algebraic expressions involving the four basic operations • simplify algebraic expressions by combining like terms • remove brackets from an expression	• carry out multiplications and divisions involving negative numbers. • understand and use highest common factors, lowest common multiples, powers and roots • understand what prime numbers are and find the prime numbers of an integer • calculate angles in parallel lines • know the geometric properties of quadrilaterals • understand how to rotate and translate shapes • construct the mid-point and the perpendicular bisector of a line, angle bisector • use a probability scale represent a chance • recognise mutually exclusive events • use sample spaces calculate probabilities • calculate probabilities from experiment • write one quantity as a percentage of another • use percentages compare quantities • use a multiplier calculate a percentage change • work out a change in value as a percentage increase or decrease • use flow diagrams generate sequences • use and work out the *n*th term of a sequence • know and understand the Fibonacci sequence • work out the area of a triangle, parallelogram, trapezium • find the surface areas of cubes and cuboids • recognise and draw the graph of a linear equation • work out the gradient in a graph from a linear equation • work out an equation of the form $y = mx + c$ from the graph • recognise and draw the graph from a simple quadratic equation • draw graphs from real-life situations illustrate the relationship between two variables • How multiply and divide by powers of 10 • round large numbers, round one or more significant figures • write a large number in standard form • multiply with numbers in standard form • work out the sectors in pie charts by their angles at the centre, use a scaling method draw pie charts • read scatter graphs and understand correlation • create scatter graphs • simplify algebraic expressions involving the four basic operations • simplify algebraic expressions by combining like terms • remove brackets from an expression • manipulate algebraic expressions • identify equivalent expressions • write algebraic expressions involving powers	• carry out multiplications and divisions involving negative numbers • understand and use highest common factors and lowest common multiples, powers and roots • find the prime numbers of an integer • calculate angles in parallel lines • know the geometric properties of quadrilaterals • understand how translate a shape • enlarge a 2D shape by a scale factor • construct the mid-point and the perpendicular bisector of a line, construct an angle bisector, perpendicular a line from or at a given point • construct a right-angled triangle • recognise mutually exclusive and exhaustive events • use sample spaces calculate probabilities • use relative frequency estimate probabilities • write one quantity as a percentage of another • use a multiplier calculate a percentage change • work out a change in value as a percentage increase or decrease • recognise congruent shapes and know the conditions for recognising congruent triangles • solve geometrical problems using congruent triangles • convert metric units for area and volume • calculate the surface area of a prism • calculate the volume of a prism • extend the range of graphs of linear equations • work out the gradient in a graph from a linear equation • work out an equation of the form $y = mx + c$ from its graph • recognise and draw the graph from a quadratic equation • solve a quadratic equation from a graph • draw graphs from real-life situations illustrate the relationship between two variables • How multiply and divide by negative powers of 10 • round a specific number of significant figures • write a large number in standard form • multiply with numbers in standard form • interpret different charts seen in the media • draw pie charts relative data size • read scatter graphs and understand correlation • create scatter graphs and use a line of best fit • simplify algebraic expressions involving the four basic operations • simplify algebraic expressions by combining like terms • remove brackets from an expression • manipulate algebraic expressions • identify algebraic expressions • write algebraic expressions involving powers • use ratio compare lengths, areas and volumes of 2D and

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	• find missing values in problems involving proportion • recognise the difference between direct and inverse proportion in problems • work out missing values • know the definition of a circle and the names of its parts • solve simple equations • substitute values into simple formulae • create a grouped frequency table from raw data • be able to draw a diagram from a frequency table • use the mean and range compare data from two sources • understand when each different type of average is most useful	• use algebraic expressions in different contexts • write algebraic expressions involving powers • recognise congruent shapes • use ratio compare lengths and areas of 2D shapes • understand and use scale diagrams • add and subtract fractions and mixed numbers • multiply a fraction or a mixed number by an integer • divide a unit fraction by an integer • divide an integer by a unit fraction • multiply by a power of ten mentally • mentally divide by a power of 10 • understand the meaning of direct proportion • find missing values in problems involving proportion • represent direct proportion graphically and algebraically • understand what is meant by inverse proportion • solve problems using inverse proportion • recognise the difference between direct and inverse proportion in problems • work out missing values • know the definition of a circle and the names of its parts • work out the relationship between the circumference and diameter of a circle • use a formula work out the circumference of a circle • solve simple equations • solve equations which include brackets • solve equations involving two operations • substitute values ina variety of formulae • create a grouped frequency table from raw data • understand and calculate the mean average of data • be able draw a diagram from a frequency table • use the mean and range compare data from two sources • understand when each different type of average is most useful	• recognise congruent shapes • enlarge a 2D shape by a scale factor • use ratio compare lengths, areas and volumes of 2D and 3D shapes • understand and use scale drawings and map ratios • add and subtract fractions and mixed numbers • multiply a fraction and an integer • divide a fraction or a mixed number by an integer • divide an integer by a unit fraction • multiply and divide with combinations of large and small numbers mentally • understand the meaning of direct and inverse proportion • find missing values in problems involving proportion • represent direct and inverse proportion graphically and algebraically • recognise direct and inverse proportion and work out missing values • know the definition of a circle and the names of its parts • work out the relationship between the circumference and diameter of a circle • calculate the circumference of a circle • calculate the area of a circle • solve equations involving brackets • solve equations with the variable on both sides • solve equations with fractional coefficients. • solve equations with brackets and fractions • change the subject of a formula • create a grouped frequency table from raw data • interpret frequency diagrams • draw a frequency diagram from a grouped frequency table • use mean and range compare data from two sources • understand when each different type of average is most useful	3D shapes • enlarge a 2D shape by a scale factor • understand how use map scales • add or subtract fractions and mixed numbers • multiply a fraction or a mixed number and an integer • divide a fraction or a mixed number by an integer • divide an integer or a mixed number by a fraction • multiply and divide with combinations of large and small numbers mentally • understand the meaning of direct proportion • find missing values in problems involving proportion • represent direct proportion graphically and algebraically • understand what inverse proportion is • use graphical and algebraic representations of inverse proportion • recognise direct and inverse proportion and work out missing values • know the definition of a circle and the names of its parts • work out the relationship between the circumference and diameter of a circle • calculate the circumference of a circle • calculate the area of a circle • solve equations involving brackets • solve equations where the answers are fractions or negative numbers • solve equations with the variable on both sides • solve equations with brackets and fractional coefficients • solve simple equations involving squares • change the subject of a formula • change the subject of a formula involving squares • create a grouped frequency table from raw data • interpret frequency diagrams • draw a frequency diagram from a grouped frequency table • be able compare data from two sources • recognise when a statistical chart may be misleading

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	Flight Path 1: GCSE grades 1 and above	Flight Path 2: GCSE grades 2 and above	Flight Path 3: GCSE grades 5 and above	Flight Path 4: GCSE grades 6 and above
Year 9	• understand what simple interest is • solve problems involving simple interest • calculate the result of a percentage increase or decrease • revise the links within fractions, decimals and percentages • multiply out brackets • solve equations with one or more sets of brackets • solve equations involving fractions • practise using formulae • know the names of polygons • know the difference between an irregular polygon and a regular polygon • work out the sum of the interior angles of a polygon • work out the sizes of the interior angles in regular polygons • infer a correlation from two related scatter graphs • use and interpret a variety of graphs and diagrams • interpret a variety of two-way tables • compare two sets of data from statistical tables and diagrams • plan a statistical investigation • calculate the circumference of a circle • use a scale factor show an enlargement • enlarge a shape about a centre of enlargement • enlarge a shape on a coordinate grid • add or subtract any two fractions • multiply two fractions • divide one fraction by another • work out the surface area of cubes and cuboids • use a simple formula work out the volume of a cube and cuboid • work out the capacity of a cube or cuboid • work out the volume of a triangular prism • draw a linear graph from any linear equation • draw graphs solve some problems • work out the distance travelled in a certain time at a given speed • use and interpret distance–time graphs • work out the speed of an object, given the distance travelled and the time taken • work out the time an object will take on a journey, given its speed and the distance travelled • understand what similar triangles are • understand that triangles can be used solve some real problems	• understand what simple interest is • solve problems involving simple interest • calculate the result of a percentage increase or decrease • choose the most appropriate method calculate a percentage change • Given the result of a percentage change, calculate the original value • revise the links within fractions, decimals and percentages • multiply out brackets • factorise expressions • solve equations with one or more sets of brackets • solve equations involving fractions • practise using formulae • know the names of polygons • know the difference between an irregular polygon and a regular polygon • work out the sum of the interior angles of a polygon • work out the sizes of the interior angles in regular polygons • infer a correlation from two related scatter graphs • use and interpret a variety of graphs and diagrams • interpret a variety of two-way tables • compare two sets of data from statistical tables and diagrams • plan a statistical investigation • calculate the circumference of a circle • calculate the area of a circle • solve problems involving the circumference and area of a circle • use a scale factor show an enlargement • enlarge a shape about a centre of enlargement • enlarge a shape on a coordinate grid • add or subtract any two fractions • multiply two fractions • divide one fraction by another • work out the surface area of cubes and cuboids • use a simple formula work out the volume of a cube and cuboid • work out the capacity of a cube or cuboid • work out the volume of a triangular prism • draw a linear graph from any linear equation • solve a linear equation from a graph • draw graphs solve some problems • solve a simple quadratic equation by drawing a graph • solve problems that use quadratic graphs • work out the distance travelled in a certain time at a given speed • use and interpret distance–time graphs • work out the speed of an object, given the distance travelled and the time taken • work out the time an object will take on a journey, given its speed and the distance travelled • understand what similar triangles are	• solve problems involving simple interest • calculate the result of a percentage increase or decrease • choose the most appropriate method to calculate a percentage change • Given the result of a percentage, to calculate the original value • choose the correct calculation to work out a percentage • multiply out brackets • factorise expressions • solve equations with one or more sets of brackets • solve equations involving fractions • change the subject of a formula • work out the sum of the interior angles of a polygon • work out exterior angles of polygon • make accurate geometric constructions • work out the exterior and interior angles of a regular polygon • work out which regular polygons tessellate • infer a correlation from two related scatter graphs • use and interpret a variety of time-series graphs • interpret a variety of two-way tables • compare two sets of data from statistical tables and diagrams • plan a statistical investigation • interpret step graphs • interpret and draw time graphs • interpret and draw exponential growth graphs • understand Pythagoras' theorem • calculate the length of the hypotenuse in a right-angled triangle • calculate the length of a shorter side in a right-angled triangle • show that a triangle is right-angled • use Pythagoras' theorem solve problems • add or subtract any two mixed numbers confidently • multiply two fractions • multiply one mixed number by another • divide one fraction or mixed number by another • expand a term with a variable or constant outside brackets • multiply out two brackets • understand and work with both positive and negative powers of ten • understand and work with standard form, using both positive and negative powers of ten • round numbers, where necessary, an appropriate or suitable degree of accuracy • solve real-life problems involving multiplication or division • convert from one metric unit another • calculate the volume of a prism	• use the multiplier method to calculate the result of a percentage increase or decrease • calculate the percentage change in a value • Given the result of a percentage change, to calculate the original value • calculate the result of repeated percentage changes • expand brackets and simplify more complex expressions • factorise more complex expressions • expand and factorise expressions with more than one variable • solve equations where the variable is in the denominator of a fraction • work out the sum of the interior angles of a polygon • work out exterior angles of polygons • calculate the interior and exterior angles of regular polygons • work out which regular polygons tessellate • infer a correlation from two related scatter graphs • draw a line of best fit to show a correlation • interpret a variety of two-way tables • estimate a mean from grouped data • draw a cumulative frequency diagram • find the interquartile range • plan a statistical investigation • interpret step graphs • interpret and draw time graphs • draw exponential growth graphs • use Pythagoras' theorem in right-angled triangles • Using Pythagoras' theorem to solve problems • use the converse of Pythagoras' theorem • choose an appropriate method to add or subtract mixed numbers • multiply two fractions or mixed numbers • divide one fraction or mixed number by another fraction or mixed number • add, subtract, multiply or divide fractions containing a variable • multiply out (or expand) two brackets • multiply out three or more brackets • factorise quadratic expressions with positive coefficients • factorise quadratic expressions with negative coefficients • recognise and use the difference of two squares • understand and work with both positive and negative powers of ten • understand and work with standard form, using both positive and negative powers of ten • multiply numbers in standard form, using both positive and negative powers of ten • divide numbers in standard form, using both positive and negative powers of ten • understand the limits of accuracy when using rounded data • calculate the volume of a cylinder

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		• understand that triangles can be used solve some real problems	• calculate the surface area of a prism • calculate the volume of a cylinder • calculate the curved surface area of a cylinder • calculate the total surface area of a cylinder • draw any linear graph from any linear equation • solve a linear equation from a graph • solve a pair of simultaneous equations • understand and use measures of speed • understand and use density and other compound units • understand and use unit pricing • understand what trigonometric ratios are • understand what the trigonometric ratios sine, cosine and tangent are • find the angle identified from a trigonometric ratio • find an unknown length of a right-angled triangle given one side and another angle	• calculate the curved surface area of a cylinder • calculate the total surface area of a cylinder • calculate the volumes and surface areas of composite shapes • draw any linear graph from any linear equation • solve a linear equation from a graph • solve a pair of simultaneous equations by drawing graphs • solve quadratic equations by drawing graphs • solve a cubic equation by drawing a graph • understand and use measures of speed • understand and use density and other compound units • understand and use unit pricing • understand what trigonometric ratios are • understand what the trigonometric ratios sine, cosine and tangent are • find the angle identified from a trigonometric ratio • find an unknown length of a right-angled triangle given one side and an angle