Mathematics Prior Attainment Related Expectations

Contents

Year 7 Prior Attainment Related Expectations

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Sequences	Mid-Year	• Sequences of diagrams • Continue number sequences • Term-to-term rules • Sequences from a written rule • Linear and non-linear sequences	• Describe and continue sequences • Find the next term(s) • Linear and non-linear sequences • Continue linear sequences • Continue non-linear sequences • Term-to-term rules	• Describe and continue sequences • Find the next term(s) • Linear and non-linear sequences • Continue linear sequences • Continue non-linear sequences • Term-to-term rules • Find missing terms (E)
Algebraic Notation	Mid-Year	• 1-step function machines (number) • 1-step function machines (algebra) • Find a function (one step) • Substitution (one step) • 2-step function machines (number) • 2-step function machines (algebra) • Substitution (two step)	• 1-step function machines (number) • 1-step function machines (algebra) • Find a function (one step) • Substitution (one step) • 2-step function machines (number) • 2-step function machines (algebra) • Find a function (two step) • Substitution (two step)	• 1-step function machines (number) • 1-step function machines (algebra) • Find a function (one step) • Substitution (one step) • 2-step function machines (number) • 2-step function machines (algebra) • Find a function (two step) • Substitution (two step)
Expressions and equations	Mid-Year	• Like and unlike terms • Collect like terms • Solve 1-step equations (+/-) • Solve 1-step equations (x/÷) • Solve any 1-step equation	• Equality and equivalence • Related facts • Like and unlike terms • Collect like terms • Solve 1-step equations (+/-) • Solve 1-step equations (x/÷) • Solve 2-step equations	• Equality and equivalence • Related facts • Like and unlike terms • Collect like terms • Solve 1-step equations (+/-) • Solve 1-step equations (x/÷) • Solve 2-step equations

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Place Value	Mid-Year	• Read and write integers to 10 000 • Understand the place value of a digit in an integer to 10 000 • Compare integers to 10 000 • Order integers to 10 000 • Work out intervals on a number line • Position integers on a number line • Place value for decimals • Compare and order decimals	• Write integers in numerals and words • Intervals on a number line • Compare and order integers • Place value for decimals • Decimals on a number line • Compare and order decimals • Round to powers of 10 • Round to the nearest integer • Round to decimal places • Powers of 10 €	• Write integers in numerals and words • Intervals on a number line • Compare and order integers • Place value for decimals • Decimals on a number line • Compare and order decimals • Round to powers of 10 • Round to the nearest integer • Round to decimal places • Powers of 10 € • Numbers greater than 1 in standard form (E) • Negative powers of 10 (E) • Numbers between 0 and 1 in standard form (E)
Four operations	Mid-Year	• Use number bonds • Add integers • Subtract integers • Solve problems with addition and subtraction • Double and halve • Multiply integers • Divide integers • Order of operations	• Add and subtract integers • Add and subtract decimals • Multiply and divide by 10, 100 and 1000 • Multiply integers • Divide integers • Multiply decimals • Divide decimals by integers • Order of operations	• Add and subtract integers • Add and subtract decimals • Multiply and divide by 10, 100 and 1000 • Multiply by 0.1 and 0.01 (E) • Multiply integers • Divide integers • Multiply decimals • Divide decimals by integers • Divide by a decimal (E) • Order of operations
Averages and range	Mid-Year	• Mode • Mean • Median • Range	• Mode • Mean • Median • Range • Solve problems with averages and range	• Mode • Mean • Median • Range • Solve problems with averages and range
Rounding and estimation	Mid-Year	• Round numbers to the nearest 10 • Round numbers to the nearest 100 • Round numbers to the nearest 10, 100 and 1000	• Round to 1 significant figure • Round to 2 or more significant figures • Estimate answers to calculations • Solve problems with estimation	• Round to 1 significant figure • Round to 2 or more significant figures • Estimate answers to calculations • Solve problems with estimation • Understand and use error interval notation (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Graphing Data	Mid-Year	• Represent data in pictograms • Interpret pictograms • Represent data in bar charts • Interpret bar charts • Represent data in dual bar charts • Interpret dual bar charts • Coordinates in the first quadrant • Read and interpret tables and scatter graphs • Scatter graphs • Correlation • Lines of best fit	• Pictograms • Bar charts • Dual bar charts • Composite bar charts • Coordinates in the first quadrant • Scatter graphs • Correlation • Lines of best fit • Time series graphs • Non-linear relationships	• Pictograms • Bar charts • Dual bar charts • Composite bar charts • Coordinates in the first quadrant • Scatter graphs • Correlation • Lines of best fit • Time series graphs • Non-linear relationships
Fractions, decimals and percentages	Mid-Year	• Explore equal parts • Fractions on number lines • Understand percentages • Explore tenths • Explore a half • Explore quarters • Explore hundredths • Explore fifths • Equivalent fractions, decimals and percentages	• Represent tenths and hundredths • Number lines with fractions and decimals • Tenths, hundredths, fifths and quarters • Eighths and thousandths • Understand percentages • Convert simple fractions, decimals and percentages • Fractions as diagrams • Fractions on a number line • Equivalent fractions • Fractions as division • Convert fractions, decimals and percentages	• Represent tenths and hundredths • Number lines with fractions and decimals • Tenths, hundredths, fifths and quarters • Eighths and thousandths • Understand percentages • Convert simple fractions, decimals and percentages • Fractions as diagrams • Fractions on a number line • Equivalent fractions • Fractions as division • Convert fractions, decimals and percentages • Fractions, decimals and percentages greater than 1 (E)
Directed Number	End of Year	• Directed number and number lines • Compare and order directed numbers • Calculations that cross zero • Directed number and zero pairs • Add directed numbers • Subtract directed numbers • Add and subtract directed numbers	• Directed number and number lines • Compare and order directed numbers • Calculations that cross zero • Directed number and zero pairs • Add directed numbers • Subtract directed numbers • Multiply and divide directed numbers • Order of operations with directed numbers • Use a calculator with directed numbers	• Directed number and number lines • Compare and order directed numbers • Calculations that cross zero • Directed number and zero pairs • Add directed numbers • Subtract directed numbers • Multiply and divide directed numbers • Order of operations with directed numbers • Use a calculator with directed numbers

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Fractions and percentages of amounts	End of Year	• Unit fraction of an amount • Use a unit fraction to find the whole • Percentage of an amount (10%, 25% and 50%) • Percentage of an amount (calculator)	• Fraction of an amount • Use a fraction to find the whole • Percentage of an amount (non-calculator) • Percentage of an amount (calculator) • Percentage increase and decrease	• Fraction of an amount • Use a fraction to find the whole • Percentage of an amount (non-calculator) • Percentage of an amount (calculator) • Percentage increase and decrease • Use a percentage to find the whole (E) • Solve problems with fractions and percentages greater than 1 (E)
Perimeter and area	End of Year	• Perimeter on a grid • Perimeter of a polygon • Use perimeter to work out side lengths • Area on a grid • Area of a rectangle • Area of a parallelogram • Area of a triangle • Convert metric units of length	• Convert metric units of length • Perimeter of a polygon • Perimeter of a compound shape • Area of rectangles and parallelograms • Area of a triangle • Area of a trapezium • Solve problems with perimeter and area	• Convert metric units of length • Perimeter of a polygon • Perimeter of a compound shape • Area of rectangles and parallelograms • Area of a triangle • Area of a trapezium • Solve problems with perimeter and area • Form expressions with perimeter and area (E)
Speed, distance and time	End of Year	• Convert between hours and minutes • Understand speed • Speed, distance and time (non-calculator) • Speed, distance and time (calculator)	• Convert between milliseconds, seconds, minutes and hour • Convert between hours, days and year • Fractions of time • Solve problems with tables and timetables • Solve problems with time and the calendar • Calculate speed • Calculate time and distance • Solve problems with speed, distance and time • Interpret distance-time graphs • Draw distance-time graphs	• Convert between milliseconds, seconds, minutes and hour • Convert between hours, days and year • Fractions of time • Solve problems with tables and timetables • Solve problems with time and the calendar • Calculate speed • Calculate time and distance • Solve problems with speed, distance and time • Interpret distance-time graphs • Draw distance-time graphs • Calculate speed from a distance-time graph (E)
Properties of number	End of Year	• Multiples • Factors • Prime numbers • Square numbers • Triangular numbers • Cube numbers • Counterexamples	• Multiples • Factors • Prime numbers • Write a number as a product of prime factors • Square, cube and triangular numbers • Square roots and cube roots • Highest common factor (HCF) • Lowest common multiple (LCM)	• Multiples • Factors • Prime numbers • Write a number as a product of prime factors • Square, cube and triangular numbers • Square roots and cube roots • Explore higher powers and roots (E) • Highest common factor (HCF) • Lowest common multiple (LCM) • HCF and LCM from a Venn diagram (E) • Use factors to simplify calculations (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Add and subtract fractions	End of Year	• Add and subtract fractions with the same denominator • Make a whole • Subtract fractions from a whole • Add and subtract fractions crossing 1 • Convert improper fractions to mixed numbers • Convert mixed numbers to improper fractions • Equivalent fractions • Simplify a fraction • Add and subtract fractions within 1 • Add and subtract fractions beyond 1	• Simplify a fraction • Convert between mixed numbers and improper fractions • Add and subtract fractions with the same denominator • Add and subtract with fractions and integers • Add and subtract fractions where denominators share a simple common multiple • Add and subtract fractions with any denominator • Add and subtract improper fractions and mixed numbers	• Simplify a fraction • Convert between mixed numbers and improper fractions • Add and subtract fractions with the same denominator • Add and subtract with fractions and integers • Add and subtract fractions where denominators share a simple common multiple • Add and subtract fractions with any denominator • Add and subtract improper fractions and mixed numbers • Use equivalence to add and subtract decimals and fractions (E) • Add and subtract simple algebraic fractions (E) • Substitution and solving equations with fractions (E)
Angles and polygons	End of Year	• Draw and measure line segments • Estimate distances • Classify angles • Estimate the size of an angle • Protractors • Measure angles • Draw angles • Angles around a point • Angles on a straight line • Angles in a triangle • Angles in a quadrilateral • Solve problems with angles	• Draw and measure lines and angles • Understand and use geometric notation • Angles around a point • Angles on a straight line • Vertically opposite angles • Recognise and name polygons • Angles in a triangle • Angles in a quadrilateral • Solve problems with angles • Parallel and perpendicular lines	• Draw and measure lines and angles • Understand and use geometric notation • Angles around a point • Angles on a straight line • Vertically opposite angles • Recognise and name polygons • Angles in a triangle • Angles in a quadrilateral • Solve problems with angles • Parallel and perpendicular lines • Angles in parallel lines (E) • Angles in a polygon (E) • Simple proofs (E)

Year 8 Prior Attainment Related Expectations

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Ratio	Mid-Year	• Understand ratio • Link ratio and fractions • Simplify ratios • Ratio problems (whole given) • Ratio problems (part given)	• Understand ratio • Ratio problems (whole given) • Ratio problems (part given) • Ratio problems (difference given) • Simplify ratios • Express ratios in the form 1:n and n:1 E) • Compare ratios and fractions • Solve problems with ratio	• Understand ratio • Ratio problems (whole given) • Ratio problems (part given) • Ratio problems (difference given) • Simplify ratios • Express ratios in the form 1:n and n:1 E) • Compare ratios and fractions • Solve problems with ratio
Proportion and scale	Mid-Year	• The unitary method • The multiplier method • Recipes • Conversion graphs • Convert between currencies • Scale diagrams	• Direct proportion • Conversion graphs • Convert between currencies • Direct proportion graphs • Similar shapes • Convert metric units • Scale diagrams • Interpret maps using scale and ratios	• Direct proportion • Conversion graphs • Convert between currencies • Direct proportion graphs • Similar shapes • Convert metric units • Scale diagrams • Interpret maps using scale and ratios
Algebraic manipulation	Mid-Year	• Collect like terms • Expand a single bracket • Factorise into a single bracket • Add and subtract directed numbers • Multiply directed numbers • Divide directed numbers • Multiply and divide directed numbers • Four operations with directed numbers	• Form algebraic expressions • Identify and use formulae, expressions, identities and equations • Simplify expressions • Use directed number with algebra • Substitution with directed number • Expand a single bracket • Factorise into a single bracket • Expand single brackets and simplify	• Form algebraic expressions • Identify and use formulae, expressions, identities and equations • Simplify expressions • Use directed number with algebra • Substitution with directed number • Expand a single bracket • Factorise into a single bracket • Expand single brackets and simplify • Expand double brackets (E) • Factorise quadratic expressions (E)
Coordinates and graphs	Mid-Year	• Plot and read coordinates in all four quadrants • Understand coordinates in all four quadrants • Lines parallel to the axes • Tables of values • Lines of the form y = mx • Lines of the form y = x + c • Lines of the form y = mx + c • Plot straight line graphs	• Coordinates in all four quadrants • Lines parallel to the axes • Table of values • Recognise and use the line y=x • Lines of the form y=mx • Introduce gradient (y=mx) • Lines with a negative gradient • Lines of the form y=x+c • Lines of the form y=mx+c	• Coordinates in all four quadrants • Lines parallel to the axes • Table of values • Recognise and use the line y=x • Lines of the form y=mx • Link y=mx to direct proportion (E) • Introduce gradient (y=mx) • Lines with a negative gradient • Lines of the form y=x+c • Lines of the form y=mx+c • Find the midpoint of a line segment (E) • Solve problems with coordinates and graphs (E) • Quadratic graphs (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Multiply and divide fractions	Mid-Year	• Representations of fractions • Convert improper fractions to mixed numbers • Convert mixed numbers to improper fractions • Simplify a fraction • Multiply a fraction by an integer • Multiply a fraction by a fraction	• Multiply a fraction by an integer • Multiply fractions • Understand reciprocals • Divide a fraction by an integer • Divide an integer by a fraction • Divide a fraction by a unit fraction • Divide fractions • Multiply and divide mixed numbers	• Multiply a fraction by an integer • Multiply fractions • Understand reciprocals • Divide a fraction by an integer • Divide an integer by a fraction • Divide a fraction by a unit fraction • Divide fractions • Multiply and divide mixed numbers • Multiply and divide algebraic fractions (E)
Symmetry and reflection	Mid-Year (for Middle and Higher) End of Year (for Lower)	• Line symmetry • Reflect a shape in a horizontal or vertical line (touching the shape) • Reflect a shape in a horizontal or vertical line (not touching the shape) • Reflect a shape in a diagonal line (touching the shape) • Reflect a shape in a diagonal line (not touching the shape)	• Line symmetry • Rotational symmetry • Reflect a shape in a horizontal or vertical line • Reflect a shape in a diagonal line	• Line symmetry • Rotational symmetry • Reflect a shape in a horizontal or vertical line • Reflect a shape in a diagonal line • Reflect a shape given equation of a line (E) • Describe a reflection (E)
Area, volume and density	Mid-Year	• Name 2-D shapes • Area of squares, rectangles and parallelograms • Find unknown lengths in rectilinear shapes • Area of a rectilinear shape • Area of a triangle • Area of a trapezium • Area of a compound shape • Solve problems with area • Volume of cubes and cuboids (counting cubes) • Volume of cubes and cuboids	• Name 2-D and 3-D shapes • Area of a 2-D shape • Area of a compound shape • Recognise prisms • Volume of cubes and cuboids • Convert metric units of mass and capacity • Understand the units of density, mass and volume • Problems with density, mass and volume	• Name 2-D and 3-D shapes • Area of a 2-D shape • Area of a compound shape • Recognise prisms • Volume of cubes and cuboids • Convert metric units of mass and capacity • Understand the units of density, mass and volume • Problems with density, mass and volume
Equations and inequalities	Mid-Year	• Use bar models • Solve 1-step equations • Solve 2-step equations • Solve equations with brackets • Solve fractional equations • Solve problems with equations	• Solve 1- and 2-step equations • Solve more complex equations • Solve factional equations • Form and solve equations • Solve equations with unknowns on both sides • Understand and use inequalities • Inequalities on a number line • Solve inequalities • Form and solve inequalities	• Solve 1- and 2-step equations • Solve more complex equations • Solve factional equations • Form and solve equations • Solve equations with unknowns on both sides • Understand and use inequalities • Inequalities on a number line • Solve inequalities • Form and solve inequalities • Solve inequalities with unknowns on both sides (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Percentages	End of Year	• Convert between fractions and decimals (non-calculator) • Convert between fractions and decimals (calculator) • Fraction of an amount • Increase or decrease an amount by a fraction • Convert percentages to fractions and decimals • Percentage of an amount (non-calculator) • Percentage increase and decrease • Multiply decimals by integers • Divide decimals by integers • Round to the nearest integer • Round to decimal places	• Percentage of an amount • Convert between percentages and decimals • Use multipliers to find percentages • Convert between decimals and percentages greater than 1 • Percentage increase using a multiplier • Percentage decrease using a multiplier • Percentage increase and decrease using a multiplier • Express one number as a fraction or a percentage of another (calculator) • Express one number as a fraction or a percentage of another (non-calc) • Percentage change • Find the original value given a percentage • Choose appropriate methods to solve percentage problems	• Percentage of an amount • Convert between percentages and decimals • Use multipliers to find percentages • Convert between decimals and percentages greater than 1 • Percentage increase using a multiplier • Percentage decrease using a multiplier • Percentage increase and decrease using a multiplier • Express one number as a fraction or a percentage of another (calculator) • Express one number as a fraction or a percentage of another (non-calc) • Percentage change • Find the original value given a percentage • Choose appropriate methods to solve percentage problems
Indices	End of Year	• Understand index notation • Simplify expressions • Collect like terms • Substitution	• Add and subtract expressions with indices • Multiply and divide expressions with indices • Addition law for indices • Subtraction law for indices • Addition and subtraction laws for indices	• Add and subtract expressions with indices • Multiply and divide expressions with indices • Addition law for indices • Subtraction law for indices • Addition and subtraction laws for indices • Powers of powers (E) • Negative indices (E) • Fractional indices (E)
Standard form	End of Year	• Integers to 1 000 000 • Positive powers of 10 • Multiply by powers of 10 • Numbers greater than 1 in standard form	• Positive and negative powers of 10 • Numbers greater than 1 in standard form • Numbers between 0 and 1 in standard form • Standard form on a calculator	• Positive and negative powers of 10 • Numbers greater than 1 in standard form • Numbers between 0 and 1 in standard form • Standard form on a calculator
Interpret and represent data	End of Year	• Interpret and collect data • Averages and range • Ungrouped frequency tables • Mean from an ungrouped frequency table • Grouped frequency tables	• Types of data • Outliers and errors • Averages and range • Choose the most appropriate average • Compare distributions using average and the range • Averages from an ungrouped frequency table • Represent and interpret grouped discrete data • Represent and interpret continuous data grouped into equal classes	• Types of data • Outliers and errors • Averages and range • Choose the most appropriate average • Compare distributions using average and the range • Averages from an ungrouped frequency table • Represent and interpret grouped discrete data • Represent and interpret continuous data grouped into equal classes • Mean and mode from a grouped frequency table (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Angles in parallel lines and polygons	End of Year	• Measure and draw angles • Angles on a straight line • Vertically opposite angles • Angles around a point • Types of triangles • Angles in a triangle • Angles in a special triangle • Types of quadrilaterals • Angles in a quadrilateral • Work out unknown sides lengths and angles	• Basic angles rules and notation • Angles between parallel lines and a transversal • Alternate and corresponding angles • Alternate, corresponding and co-interior angles • Solve complex problems with angles in parallel lines • Properties of special quadrilaterals and their diagonals • Find sides and angles in special quadrilaterals • Exterior angles of a polygon • Interior angles of a polygon • Interior angles in a regular polygon	• Basic angles rules and notation • Angles between parallel lines and a transversal • Alternate and corresponding angles • Alternate, corresponding and co-interior angles • Solve complex problems with angles in parallel lines • Properties of special quadrilaterals and their diagonals • Find sides and angles in special quadrilaterals • Exterior angles of a polygon • Interior angles of a polygon • Interior angles in a regular polygon • Prove simple geometric proofs (E)
Tables and probability	End of Year	• Probability vocabulary • The probability scale • List outcomes • Probability of a single event • Probability experiments • Sample spaces for 1 or more events • Two-way tables • Frequency trees	• Probability vocabulary • The probability scale • Probability of a single event • Use the sum of probabilities being equal to 1 • Probability experiments • Sample spaces for 1 or more events • Probabilities from sample space diagrams • Two-way tables • Probabilities from two-way tables • Frequency trees • Probabilities from frequency trees	• Probability vocabulary • The probability scale • Probability of a single event • Use the sum of probabilities being equal to 1 • Probability experiments • Sample spaces for 1 or more events • Probabilities from sample space diagrams • Two-way tables • Probabilities from two-way tables • Frequency trees • Probabilities from frequency trees
Circles	End of Year	• Circle vocabulary • Circumference of a circle (calculator) • Circumference of a circle (non-calculator) • Area of a circle (calculator) • Area of a circle (non-calculator)	• Circle vocabulary • Pi as a ratio • Circumference of a circle • Perimeter of parts of a circle • Area of a circle • Area of parts of a circle • Area and circumference of a circle • Perimeter of compound shapes with circles • Perimeter and area of compound shapes with circles	• Circle vocabulary • Pi as a ratio • Circumference of a circle • Perimeter of parts of a circle • Area of a circle • Area of parts of a circle • Area and circumference of a circle • Perimeter of compound shapes with circles • Perimeter and area of compound shapes with circles

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Graphs and charts	End of Year	• Draw pie charts • Angles in sectors of pie charts • Interpret pie charts	• Pictograms and bar charts • Vertical line charts • Draw pie charts • Interpret pie charts • Line graphs • Choose the most appropriate graph or chart • Compare distributions using graphs • Misleading graphs and charts	• Pictograms and bar charts • Vertical line charts • Draw pie charts • Interpret pie charts • Line graphs • Choose the most appropriate graph or chart • Compare distributions using graphs • Misleading graphs and charts
Sequences	End of Year	• Describe and continue sequences • Generate a sequence given a rule in words • Generate a sequence given a simple algebraic rule	• Generate and describe a sequence given a rule in words • Generate a sequence given a simple algebraic rule • nth term of a linear sequence	• Generate and describe a sequence given a rule in words • Generate a sequence given a simple algebraic rule • nth term of a linear sequence • Generate a sequence given a complex algebraic rule (E)

Year 9 Prior Attainment Related Expectations

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Properties of number	Mid-Year	• Factors and multiples • Highest common factor (HCF) • Lowest common multiple (LCM) • Prime numbers • Write a number as a product of prime factors • Create Venn diagrams • Interpret Venn diagrams	• Factors, multiples and primes • Write a number as a product of prime factors • Highest common factor (HCF) and lowest common multiple (LCM) • Venn diagrams • Use a Venn diagram to calculate the HCF and LCM • Integers, real numbers and rational numbers	• Factors, multiples and primes • Write a number as a product of prime factors • Use prime factors (E) • Highest common factor (HCF) and lowest common multiple (LCM) • Venn diagrams • Use a Venn diagram to calculate the HCF and LCM • Integers, real numbers and rational numbers • Introduction to surds (E)
Percentages	Mid-Year	• Convert between fractions, decimals and percentages • Percentage of an amount • Percentage increase and decrease • Find the original value given a percentage • Express one number as a percentage of another • Solve problems with percentages	• Percentage increase and decrease • Express a change as a percentage • Find the original value after a percentage change • Solve problems with percentages (non-calculator) • Solve problems with percentages (calculator) • Repeated percentage change • Understand interest • Simple interest • Compound interest	• Percentage increase and decrease • Express a change as a percentage • Find the original value after a percentage change • Solve problems with percentages (non-calculator) • Solve problems with percentages (calculator) • Repeated percentage change • Understand interest • Simple interest • Compound interest
Area and volume	Mid-Year	• Name 3-D shapes • Faces, edges and vertices • Nets of cubes and cuboids • Nets of other 3-D shapes • Area of a 2-D shape • Area of a compound shape • Surface area of cubes and cuboids • Volume of a prism • Volume of a cylinder	• Nets • Naming 2D and 3D shapes • Area of a 2-D shape • Area and circumference of a circle • Surface area of cubes and cuboids • Volume of a prism • Volume of a cylinder	• Nets • Naming 2D and 3D shapes • Area of a 2-D shape • Area and circumference of a circle • Surface area of cubes and cuboids • Surface area of a triangular prism (E) • Surface area of a cylinder (E) • Volume of a prism • Volume of a cylinder • Volume of cones, pyramids and spheres (E) • Convert metric units of area and volume (E)

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Equations, inequalities and formulae	Mid-Year	• Solve equations • Solve equations with brackets • Understand inequalities • Inequalities on a number line • Solve 1-step inequalities • Solve 2-step inequalities	• Solve equations and inequalities • Solve equations and inequalities with brackets • Solve equations and inequalities with unknowns on both sides • Solve problems with equations and inequalities • Substitute into formulae and equations • Change the subject of a formula (one-step) • Change the subject of a formula (two-step)	• Solve equations and inequalities • Solve equations and inequalities with brackets • Inequalities with negative numbers (E) • Solve equations and inequalities with unknowns on both sides • Solve problems with equations and inequalities • Substitute into formulae and equations • Change the subject of a formula (one-step) • Change the subject of a formula (two-step) • Change the subject of complex formula (E)
Fractions	Mid-Year	• Add and subtract fractions • Multiply with fractions • Divide a fraction by an integer • Divide a fraction by a fraction	• Add and subtract fractions • Multiply and divide fractions • Fraction of an amount	• Add and subtract fractions • Multiply and divide fractions • Fraction of an amount
Rates	Mid-Year	• Speed, distance and time • Interpret distance-time graphs • Draw distance-time graphs	• Speed, distance and time • Distance-time graphs • Flow problems and their graphs • Rates of change and their units	• Speed, distance and time • Distance-time graphs • Flow problems and their graphs • Rates of change and their units • Convert compound units (E)
Standard Form	Mid-Year	• Compare and order numbers greater than 1 in standard form • Negative powers of 10 • Numbers between 0 and 1 in standard form	• Numbers in standard form • Compare and order numbers in standard form • Multiply and divide numbers in standard form • Add and subtract numbers in standard form	• Numbers in standard form • Compare and order numbers in standard form • Multiply and divide numbers in standard form • Add and subtract numbers in standard form
Maths and money	Mid-Year	• Order of operations • Four operations • Four operations with decimals • Solve problems with four operations • Understand a bank account • Jobs and pay (wages) • Jobs and pay (taxes) • Ways to pay (bills) • Budgeting • Best buy problems • Borrowing (loans) • Spending overseas (holidays)	• Understand a bank account • Spending • Ways to pay • Ways to save • Jobs and pay • Investing • Borrowing (buying a house) • Running a house or a business • Budgeting • Borrowing (loans) • Spending overseas • Insurance	• Understand a bank account • Spending • Ways to pay • Ways to save • Jobs and pay • Investing • Borrowing (buying a house) • Running a house or a business • Budgeting • Borrowing (loans) • Spending overseas • Insurance

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Straight line graphs	Mid-Year	• Plot and read coordinates in four quadrants • Lines parallel to the axes • Lines of the form $y=mx$ • Lines of the form $y=x+c$ • Lines of the form $y=mx+c$ • Lines of the form $x+y=a$, $y-x=a$ and $x-y=a$	• Lines, parallel to the axes, y=x and y=-x • Explore gradients • Explore intercepts • y=mx+c • Find the equation of a line from a graph • Interpret gradient and intercepts of real-life graphs	• Lines, parallel to the axes, y=x and y=-x • Explore gradients • Explore intercepts • y=mx+c • Rearrange equations to the form y=mx+c (E) • Find the equation of a line from a graph • Interpret gradient and intercepts of real-life graphs • Graph inequalities (E)
Ration and proportion	End of Year	• Direct proportion • Direct proportion and conversion graphs • Ratio problems (whole, part or difference given) • Solve problems with ratio • Inverse proportion	• Direct proportion • Direct proportion and conversion graphs • Inverse proportion • Ratio problems (whole or part given)	• Direct proportion • Direct proportion and conversion graphs • Inverse proportion • Ratio problems (whole or part given)
Constructions and congruence	End of Year	• Measure and draw angles up to 180° • Measure and draw angles between 180° and 360° • Construct triangles using ASA • Construct triangles using SSS • Construct triangles using SAS • Understand congruence • Congruent triangles	• Draw and measure angles • Construct and interpret scale drawings • Construct triangles using ASA, SAS and SSS • Construct an angle bisector • Construct a perpendicular bisector • Construct a perpendicular from or to a point • Construct more complex polygons • Identify congruent figures • Congruent triangles	• Draw and measure angles • Construct and interpret scale drawings • Construct triangles using ASA, SAS and SSS • Construct an angle bisector • Construct a perpendicular bisector • Construct a perpendicular from or to a point • Construct more complex polygons • Identify congruent figures • Congruent triangles
Similarity	End of Year	• Recognise similar shapes • Work out unknown lengths and angles in similar shapes	• Recognise enlargement and similarity • Work out unknown lengths and angles in similar shapes	• Recognise enlargement and similarity • Work out unknown lengths and angles in similar shapes
Algebraic manipulation	End of Year	• Expand single brackets and simplify (numerical coefficients) • Expand single brackets (algebraic coefficients) • Expand double brackets	• Expand single brackets and simplify • Factorise into a single bracket • Expand double brackets • Expand more complex double brackets • Use identities	• Expand single brackets and simplify • Factorise into a single bracket • Expand double brackets • Expand more complex double brackets • Use identities

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Pythagoras' theorem	End of Year	• Squares and square roots • Solve equations with squares and square roots • Identify the hypotenuse • Pythagoras' theorem (find the hypotenuse) • Pythagoras' theorem (find a shorter side) • Pythagoras' theorem (find any side)	• Solve equations with squares and square roots • Identify the hypotenuse • Determine whether a triangle is right-angled • Pythagoras' theorem (find the hypotenuse) • Pythagoras' theorem (find any side) • Use Pythagoras' theorem on coordinate axes	• Solve equations with squares and square roots • Identify the hypotenuse • Determine whether a triangle is right-angled • Pythagoras' theorem (find the hypotenuse) • Pythagoras' theorem (find any side) • Use Pythagoras' theorem on coordinate axes
Non-linear graphs	End of Year	• Substitute into quadratic expressions • Draw quadratic graphs	• Substitute into quadratic expressions • Draw quadratic graphs • Draw more complex quadratic graphs • Interpret quadratic graphs • Interpret reciprocal and exponential graphs	• Substitute into quadratic expressions • Draw quadratic graphs • Draw more complex quadratic graphs • Interpret quadratic graphs • Interpret reciprocal and exponential graphs
Probability	End of Year	• Probability of a single event • Use diagrams to work out probabilities • Probabilities from Venn diagrams • Probability of an event not happening • Probability experiments • Expected outcomes	• Identify and represent sets • Intersection of a set • Union of a set • Probability of a single event • Use diagrams to work out probabilities • Relative frequency • Expected outcomes • Independent events • Probabilities from Venn diagrams	• Identify and represent sets • Intersection of a set • Union of a set • Probability of a single event • Use diagrams to work out probabilities • Relative frequency • Expected outcomes • Independent events • Probabilities from Venn diagrams
Transformations	End of Year	• Enlargement (on a grid) • Enlargement from a point • Enlargement (on coordinate axes) • Describe an enlargement • Line symmetry • Rotational symmetry • Rotation about a point (on the shape) • Rotation about a point (not on the shape) • Translation (points and line segments) • Translation • Describe a translation	• Enlargement (positive scale factor) • Enlargement from a point (positive scale factor) • Enlargement (fractional scale factor) • Describe an enlargement • Rotation about a point • Describe a rotation • Translation • Describe a translation • Reflection	• Enlargement (positive scale factor) • Enlargement from a point (positive scale factor) • Enlargement (fractional scale factor) • Describe an enlargement • Rotation about a point • Describe a rotation • Translation • Describe a translation • Reflection

Topic	Time of Year	Lower Prior Attainer Expectations	Middle Prior Attainer Expectations	Higher Prior Attainer Expectations
Simultaneous Equations	End of Year	N/A	• Use one value to find another • Introduction to simultaneous equations • Solve simultaneous equations using graphs • Solve simultaneous equations (no adjustments) • Manipulating equations • Solve simultaneous equations (adjust one)	• Use one value to find another • Introduction to simultaneous equations • Solve simultaneous equations using graphs • Solve simultaneous equations (no adjustments) • Manipulating equations • Solve simultaneous equations (adjust one)
Trigonometry	End of Year	N/A	• Identify hypotenuse, opposite and adjacent sides • Use the tangent ratio to find unknown side lengths • Use sine and cosine ratios to find unknown side lengths • Use sine, cosine and tangent ratios to find unknown angles • Choose the right method	• Identify hypotenuse, opposite and adjacent sides • Use the tangent ratio to find unknown side lengths • Use sine and cosine ratios to find unknown side lengths • Use sine, cosine and tangent ratios to find unknown angles • Choose the right method
Angles in polygons	End of Year	• One-step angle problems • Angles in a triangle • Angles in a quadrilateral • Multi-step angle problems • Solve problems with angles and shapes • Polygons up to an octagon • Exterior angles of a regular polygon • Interior angles of a regular polygon • Solve problems with angles in a regular polygon • Solve problems with angles in any polygon	N/A	N/A
Angles in parallel lines	End of Year	• Alternate angles • Corresponding angles • Co-interior angles • Alternate, corresponding and co-interior angles • Solve problems with angles in parallel lines	N/A	N/A