Autumn First Half Term (HT1) (8 weeks)

Year 7

Teaching	Assessment
Integers, powers, roots • Multiplying and dividing integers • Finding lowest common multiples • Finding highest common factors • Finding prime factors • Using prime factors to find HCF and LCM • Cubing positive and negative numbers • Finding the cube root of a number • Using power notation **Sequences** • Generating a sequence from a term-to-term rule • Using algebra to find missing terms in an arithmetic sequence • Generating sequences like the Fibonacci sequence • Generating a sequence from a position-to-term rule • Describing a sequence using a position-to-term rule • Writing a position-to-term rule using algebra **Angles, shapes and constructions** • Identifying alternate and corresponding angles • Proving that the angles of any triangle add up to 180 and that the angles of any quadrilateral add up to 360 • Knowing that the exterior angle of a triangle is equal to the sum of the two interior opposite angles • Solving problems using properties of angles formed by parallel and intersecting lines • Calculating the sum of interior angles of quadrilaterals, pentagons and hexagons • Calculating the interior and exterior angles of a regular polygon • Constructing a perpendicular bisector • Bisecting an angle • Constructing a perpendicular from a point to a line • Constructing a perpendicular from a point on a line • Using a ruler and compasses to construct a right-angled triangle, given the longest side and another side • Classifying quadrilaterals by their geometric properties • Calculating the midpoint of a line segment • Knowing the parts of a circle	**Half-term Assessment** • [A1] Addition/subtraction decimals • [A2] Powers, roots and negatives • [A3] Simplifying expressions • [A4] Multiplication/division • [A5] Four rules with fractions • [A6] Percentage of an amount • [A7] Area and perimeter • [B1] Substitution • [B2] Alternate and corresponding angles • [B3] Nth term • [B4] Using prime numbers • [B5] Properties of triangles • [B6] Squaring and square rooting

Autumn Second Half Term (HT2) (7 weeks)

Year 7

Teaching	Assessment
Probability • Calculating the probability of an event for equally likely outcomes • Constructing a sample space diagram • Understanding that random processes are unpredictable • Using experimental data to estimate probabilities • Understanding the effect of repeating an experiment many times • Comparing theoretical and experimental probabilities • Finding the probability of an event not occurring • Using diagrams to record all possible outcomes for two events • Using diagrams to record all possible outcomes for two successive events **Fractions, decimals and percentages** • Using division to convert fractions to decimals • Understanding that a recurring decimal is a fraction • Ordering fractions • Calculating percentages of numbers, quantities and measurements • Using percentages to solve problems • Finding the outcome of a percentage increase or decrease • Calculating successive percentage increases or decreases • Adding and subtracting fractions with different denominators • Multiplying and dividing whole numbers by fractions • Multiplying and dividing fractions by fractions • Cancelling common factors before multiplying and dividing fractions • Using facts you know to answer unfamiliar questions • Working with multiples, factors, powers and roots **Expressions, equations and formulae** • Simplifying expressions by collecting like terms • Expanding expressions involving brackets • Writing expressions using index notation • The order of operations for expressions involving indices • Finding the value of a formula • Obtaining a formula • Checking that a formula works • How to solve equations involving brackets • How to form and solve simple equations	**Half-term Assessment** • [A1] Addition/subtraction decimals • [A2] Powers, roots and negatives • [A3] Simplifying expressions • [A4] Multiplication/division • [A5] Four rules with fractions • [A6] Percentage of amount/increase • [A7] Area and perimeter • [B1] Percentage of an amount • [B2] Converting F,D and P • [B3] Expanding and simplifying expressions • [B4] Probability • [B5] Expanding and simplifying expressions • [B6] Probability • [B7] Writing an expression

Spring First Half Term (HT3) (6 weeks)

Year 7

Teaching	Assessment
Symmetry Homework Project **Area, volume, 3D solids** • Calculating the area of a triangle, parallelogram and trapezium • Calculating the area of compound shapes • Converting between measures of area such as mm2 and cm2 • Drawing plans and elevatioins of 3-D shapes • Identifying nets of cubes and cuboids • Calculating the volume of cuboids and shapes made of cuboids • Calculating the surface area of cuboids and shapes made from cuboids • Calculating the surface are and volume of prisms • Converting between measures of volume such as mm3 and cm3 • Converting between metric units of length, area, volume and mass • Justifying an appropriate degree of accuracy for a measurement • Making rough conversions between metric and imperial measures **Functions, mappings and graphs** • Identifying a linear function • Writing a function machine, using algebra • Identifying and writing rules linking inputs and outputs • Finding the inverse of a linear function • Finding the gradient of the graph of a linear function • Describing a straight line using an equation • Recognising that straight lines can be written in the form y = mx + c • Interpreting the equation of a line • Drawing lines of linear functions in the form ry + sx = t • Constructing a mapping diagram from a function machine • Identifying a linear function	**Half-term Assessment** • [A1] Addition/subtraction decimals • [A2] Powers, roots and negatives • [A3] Simplifying expressions • [A4] Multiplication/division • [A5] Four rules with fractions • [A6] Percentage increase/decrease • [A7] Area • [B1] Area of trapezium • [B2] Volume of prism • [B3] Metric conversion • [B4] Metric imperial conversion • [B5] Function machines • [B6] Straight line graphs

Spring Second Half Term (HT4) (6 weeks)

Year 7

Teaching	Assessment
Place value, rounding, calculations • Working with negative powers of 10 • Multiplying and dividing integers and decimals by any power of 10 • Rounding numbers to a given power of 10 • Rounding numbers to either 1 or 2 decimal places • Rounding decimals to the nearest whole number • Written methods for adding, subtracting, multiplying and dividing decimals • Knowing mental strategies for working out calculations • Knowing mental strategies for solving problems involving fractions, decimals and percentages • Estimating the square roots of non-square numbers • Estimating the answer to calculations by rounding • Using a calculator for more complex calculations • Writing answers using a format consistent with the question • Converting time given in decimal format into hours, minutes and seconds • Using unrounded numbers in calculations that rely on previous results **Congruence and tansformations** • Identifying congruent shapes, including triangles and quadrilaterals • Enlarging an object with positive and negative scale factors • Describing enlargements • Determining scale factors • Knowing that translations, rotations and reflections preserve length and angle and map on to congruent images • Carrying out combinations of reflections, rotations and translations • Finding the symmetry properties of two-dimensional shapes • Identifying and sketching planes of symmetry of 3-D solids	**Half-term Assessment** • [A1] Addition/subtraction decimals • [A2] Powers, roots and negatives • [A3] Simplifying expressions • [A4] Multiplication/division • [A5] Four rules with fractions • [A6] Percentage increase/decrease • [A7] Area and perimeter • [B1] Calculator % problems • [B2] Fraction/decimal/ percent • [B3] Expand and simplify • [B4] Probability • [B5] Expressions in shapes

Summer First Half Term (HT5) (5 weeks)

Year 7

Teaching	Assessment

Surveys and data

- Knowing the different forms that data can take
- Testing a hypothesis
- Identifying inappropriate questions in a survey
- Sampling a population
- Using a two-way grouped frequency table to record data
- Drawing a pie chart by calculating the degrees for each sector
- Drawing bar charts or frequency diagrams as appropriate for discrete and continuous data
- Drawing and interpreting line graphs
- Drawing and interpreting scatter graphs
- Understanding that statistics can be misleading
- Constructing a stem and leaf diagram
- Calculating the range, mean, median and mode from a stem and leaf diagram
- Interpreting different types of graph
- Giving reasons to justify your answers
- Deciding whether a graph displays its data clearly

Ratio, proportion and real-life graphs

- Working out more complex calculations involving brackets and powers
- Understanding that multiplying by a number does not always produce a bigger answer
- Understanding that dividing by a number does not always produce a smaller answer
- Understanding the relationship between fractions and ratios
- Simplifying ratios
- Dividing a quantity in a given ratio
- Using the unitary method to solve problems involving ratio
- Spotting incorrect answers in a number of different situations
- Knowing the properties of direct proportionality
- Using graphs to find the relationship between two variables
- Writing a ratio in the form 1:n
- Converting a ratio to an equation linking two variables

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 7

Teaching	Assessment

Formulae, expressions and graphs

- Simplifying more complex algebraic expressions involving brackets
- Forming algebraic expressions
- Multiplying a single term over a bracket
- Taking out a single term common factor
- Interpreting distancetime graphs
- Drawing graphs based on real situations
- Recognising that some graphs can be misleading
- Giving possible explanations for the shape of graphs

Scale drawing, loci and bearings

- Converting lengths from scale drawings to real life, and vice versa
- Drawing diagrams to scale
- Interpreting diagrams drawn to scale
- Interpreting scaled areas
- Constructing the locus of points from a fixed point
- Knowing when to use solid or dashed lines in locus diagrams
- Constructing the locus of points equidistant from two fixed points or two fixed lines
- Constructing a regular hexagon
- Constructing the locus of points from a line
- Constructing a triangle given the lengths of all three sides
- Constructing a shape made of triangles
- Measuring and calculating three-figure bearings
- Drawing diagrams involving three-figure bearings

Collecting and analysing data

- Selecting an appropriate class interval for grouping continuous data
- Preparing grouped frequency tables from lists of data
- Interpreting more complex graphs
- Giving possible reasons for the shapes of graphs
- Justifying explanations using the evidence from calculations
- Estimating the mean of grouped continuous data
- Identifying the modal class of grouped data
- Realising that the mean of grouped data is often very close to the mean of the raw data

Half-term Assessment

- [A1] Addition/subtraction decimals
- [A2] Powers, roots and negatives
- [A3] Simplifying expressions
- [A4] Multiplication/division
- [A5] Four rules with fractions
- [A6] Percentage increase/decrease
- [A7] Area
- [B1] Averages
- [B2] Questionnaire and data collection
- [B3] Draw a pie chart
- [B4] Sharing in a given ratio
- [B5] Speed distance time graphs
- [B6] Bearings
- [B7] Estimating mean

Autumn First Half Term (HT1) (8 weeks)

Year 7

Teaching	Assessment
Integers, powers, roots • Multiplying and dividing integers • Finding lowest common multiples • Finding highest common factors • Finding prime factors • Finding squares and square roots • Cubing numbers • Finding the cube root of a number • Using power notation • Using a calculator to find square roots and cube roots **Sequences** • Finding term-to-term rules for arithmetic sequences • Generating a sequence from a term-to-term rule • Generating a sequence from a position-to-term rule • Writing a position-to-term rule using algebra • Using the relationship between a term-to-term rule and a rule for the nth term **Angles, shapes and constructions** • Identifying alternate and corresponding angles • Proving that the angles of a triangle add up to 180 and that the angles of any quadrilateral add up to 360 • Knowing that the exterior angle of a triangle is equal to the sum of the two interior opposite angles • Constructing a perpendicular bisector • Bisecting an angle • Constructing a perpendicular from a point to a line • Constructing a perpendicular from a point on a line • Classifying quadrilaterals by their geometric properties • Calculating the midpoint of a line segment	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding & subtracting fractions • [A6] Percentages of amounts • [A7] Fractions of amounts • [A8] Area & perimeter of a rectangle • [B1] Generating a sequence from nth term • [B2] Prime factorisation • [B3] Angle calculations with reasons • [B4] Adding/subtracting +/- numbers • [B5] Substitution • [B6] Multiplying with +/- numbers • [B7] Using negative numbers • [B8] Alternate and corresponding angles

Autumn Second Half Term (HT2) (7 weeks)

Year 7

Teaching	Assessment
Probability • Recognising certain and impossible outcomes and stating their probabilities • Calculating the probability of an event for equally likely outcomes • Understanding that random processes are unpredictable • Using experimental data to estimate probabilities • Understanding the effect of repeating an experiment many times • Comparing theoretical and experimental probabilities • Finding the probability of an event not occurring • Using diagrams to record all possible outcomes for a single event • Using diagrams to record all possible outcomes for two successive events **Fractions, decimals and percentages** • Using division to convert fractions to decimals • Understanding that a recurring decimal is a fraction • Ordering fractions • Calculating percentages of numbers, quantities and measurements • Using percentages to solve problems • Finding the outcome of a percentage increase or decrease • Adding and subtracting fractions with different denominators • Multiplying and dividing whole numbers by fractions • Using facts you know to answer unfamiliar questions **Expressions, equations and formulae** • Identifying the correct order for calculations involving algebra • Simplifying expressions by collecting like terms • Expanding simple expressions involving brackets • Writing expressions using index notation • Substituting values into expressions and formulae • Deriving simple formulae • Forming and solving equations	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding & subtracting fractions • [A6] Percentages of amounts • [A7] Fractions of amounts • [A8] Area & perimeter of a triangle • [B1] Percentage of an amount • [B2] Converting F,D and P • [B3] Expanding and simplifying expressions • [B4] Probability • [B5] Expanding and simplifying expressions • [B6] Probability • [B7] Writing an expression

Spring First Half Term (HT3) (6 weeks)

Year 7

Teaching	Assessment
Symmetry Homework Project **Area, volume, 3D solids** • Calculating the area of triangles, parallelograms and trapeziums • Calculating the area of compound shapes • Drawing plans and elevatioins of 3-D shapes • Identifying nets of cubes and cuboids • Calculating the volume of cuboids and shapes made of cuboids • Calculating the surface area of cuboids and shapes made from cuboids • Making rough conversions between metric and imperial measures • Justifying an appropriate degree of accuracy for a measurement **Functions, mappings and graphs** • Writing a function machine as an equation • Identifying and writing more complex rules linking inputs and outputs • Describing a straight line using an equation • Writing an equation for a straight line in the form y = mx + c • Constructing a mapping diagram from a function machine	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Calculating with fractions • [A6] Percentages of amounts • [A7] Prime factors • [A8] Area and perimeter of a rectangle • [B1] Area of a trapezium • [B2] Problem solving involving area • [B3] Volume of a prism • [B4] Surface area of 3D shapes • [B5] Plans and elevations • [B6] Metric/Imperial conversions • [B7] Function machines • [B8] Straight line graphs

Spring Second Half Term (HT4) (6 weeks)

Year 7

Teaching	Assessment
Place value, rounding, calculations • Multiplying and dividing integers and decimals by 0.1 and 0.01 • Rounding numbers to the nearest mulutiple of a given power of 10 • Rounding numbers to either 1 or 2 decimal places • Rounding decimals to the nearest whole number • Written methods for adding, subtracting, multiplying and dividing involving decimals • Knowing mental strategies for adding, subtracting, multiplying and dividing • Converting between fractions, decimals and percentages • Knowing mental strategies for solving problems involving fractions, decimals and percentages • Estimating the square roots of non-square numbers • Estimating the answer to calculations by rounding • Using a calculator for more complex calculations • Writing answers in a format consistent with the question • Converting time given in decimal format into hours, minutes and seconds **Congruence and tansformations** • Identifying congruent shapes, including triangles and quadrilaterals • Enlarging an object • Describing enlargements • Carrying out combinations of reflections, rotations and translations • Finding the symmetry properties of two-dimensional shapes	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Calculating with fractions • [A6] Percentages of amounts • [A7] Metric conversion • [A8] Area of a triangle • [B1] Functional problems involving division/multiplication • [B2] Calculating the mid-point of two calculations • [B3] Recognise congruent shapes • [B4] Transformations • [B5] Rounding • [B6] Powers of 10 • [B7] Multiplying decimals

Summer First Half Term (HT5) (5 weeks)

Year 7

Teaching	Assessment

Surveys and data

- Knowing different forms that data can take
- Testing a theory
- Identifying inappropriate questions in a survey
- Sampling a population
- Using two-way tables to record data
- Drawing a pie chart by calculating the degrees for each sector
- Drawing bar charts or frequency diagrams as appropriate for discrete and continuous data
- Drawing and interpreting simple line graphs
- Drawing and interpreting scatter graphs
- Understanding that statistics can be misleading
- Calculating the mean, median and mode from a frequency diagram
- Constructing a stem and leaf diagram
- Calculating the range, mean, median and mode from a stem and leaf diagram
- Interpreting different types of graph
- Giving reasons to justify your answers
- Deciding whether a graph displays its data clearly

Ratio, proportion and real-life graphs

- Working out more complex calculations involving brackets and powers
- Recognising the relationship between fractions and ratios
- Simplifying ratios
- Dividing a quantity in a given ratio
- Using the unitary method to solve problems involving ratio
- Spotting incorrect answers in a number of different situations
- Properties of direct proportion
- Using graphs to find the relationship between two variables
- Writing a ratio in the form 1:n
- Converting a ratio to an equation linking two variables

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 7

Teaching	Assessment
Formulae, expressions and graphs • Simplifying algebraic expressions involving brackets • Forming algebraic expressions • Interpreting distancetime graphs • Drawing graphs based on real situations • Giving plausible explanations for the shapes of graphs **Scale drawing, loci and bearings** • Converting between lengths on scale drawings and in real life, given the scale • Drawing diagrams to scale • Interpreting diagrams drawn to scale • Constructing the locus of points from a fixed point • Constructing the locus of points from a fixed line • Knowing when to use solid or dashed lines in locus diagrams • Constructing the locus of points equidistant from a pair of fixed points or lines • Constructing a triangle given the lengths of all three sides • Constructing a shape made of triangles • Measuring three-figure bearings • Drawing diagrams involving three-figure bearings **Collecting and analysing data** • Preparing grouped frequency tables from lists of data • Selecting an appropriate class interval for grouping continuous data • Interpreting more complex graphs • Giving possible reasons for the shapes of graphs • Justifying explanations using the evidence from calculations • Estimating the mean of grouped continuous data • Identifying the modal class of grouped data • Realising that the mean of grouped data is often very close to the mean of the raw data	**Half-term Assessment** • [A1] Multiplying decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Calculating with fractions • [A5] Percentage increase • [A6] Metric conversion • [A7] Perimeter of a compound shape • [B1] Averages • [B2] Questionnaires • [B3] Drawing pie charts • [B4] Sharing in a given ratio • [B5] Speed distance time graphs • [B6] Constructing triangles • [B7] Bearings • [B8] Averages from a frequency table

Autumn First Half Term (HT1) (8 weeks)

Year 7

Teaching	Assessment
Sequences and functions • Using symbols to represent numbers • Increasing and decreasing sequences • How to use a term-to-term rule • How to use a position-to-term rule • Using operations to make functions • Applying an operation and its inverse • How to use algebra to describe rules • How to use a mapping diagram **The Number system: integers and decimals** • Reading decimals on a number line • Comparing decimals • Multiplying and dividing decimals by 10, 100 and 1000 • Rounding whole numbers and decimals • Finding multiples of a number • Finding all of the factors of a number • Using the relationship between multiples and factors • Recognising prime numbers and prime factors • Using a number line for positive and negative numbers • Adding and subtracting negative numbers • Adding and subtracting decimals • Using addition and subtraction of decimals to solve problems • Calculating square numbers and square roots • Recognising the relationship between odd numbers and square numbers • Identifying triangular numbers • Recognising the relationship between triangular numbers and square numbers **Length, area, perimeter** • Measuring and drawing to the nearest millimetre • Estimating distances using appropriate units • Calculating the perimeter of a figure • Finding the areas of shapes based on rectangles • Converting between cm2 and mm2 • Finding the area of a triangle • Estimating the area of complex shapes	**Half-term Assessment** • [A1] Addition and subtraction • [A2] Multiplying and dividing • [A3] Doubling and halving • [A4] Fractions of amounts • [A5] Time calculations • [A6] Substitution • [A7] Area and perimeter • [A8] Naming shapes • [B1] Missing terms in a sequence (addition) • [B2] Missing terms in a sequence (multiplication) • [B3] Substitution • [B4] Rounding to 1dp • [B5] Multiples • [B6] Powers and roots • [B7] Negative numbers • [B8] Perimeter and area • [B9] Comparing perimeter • [B10] Area compound shape • [B11] Factors • [B12] Factors • [B13] Prime numbers

Autumn Second Half Term (HT2) (7 weeks)

Year 7

Teaching	Assessment
Multi-step calculations, fractions and percentages • Working out calculations that involve more than one operation • Working out calculations that involve squares and square roots • Working out calculations that involve brackets • Expressing one quantity as a fraction of another • Using equivalent fractions • Changing between improper fractions and mixed numbers • Writing fractions as decimals • Using your calculator for complex calculations • Using the calculator memory • Checking calculations by estimation • Representing a percentage on a diagram • Converting between fractions, decimals and percentages **Processing and representing Data, probability** • Finding the mean, median and mode • Finding the range • Describing situations involving chance • Identifying the possible outcomes for a situation • Recognising when the outcomes are equally likely • Calculating the probablility of an event for equally likely outcomes • Interpreting various types of chart used in statistics • Drawing a bar chart • Drawing a frequency diagram for grouped data **Formulae, functions and equations** • Using a formula • Simplifying expressions in algebra • Building and simplifying a formula • Representing an equation using a flow diagram • Solving an equation using inverse operations	**Half-term Assessment** • [A1] Addition and subtraction • [A2] Multiplying and dividing • [A3] Doubling and halving • [A4] Fractions of amounts • [A5] Time calculations • [A6] Substitution • [A7] Area and perimeter • [A8] Naming shapes • [B1] Order of operations (BIDMAS) • [B2] Square roots • [B3] Fractions • [B4] Estimating • [B5] Shaded fractions • [B6] Equivalent fractions • [B7] Percentages • [B8] Averages • [B9] Bar charts and pictograms • [B10] Probability • [B11] Solving two step equations • [B12] Substitution • [B13] Simplifying expressions • [B14] Writing an expression

Spring First Half Term (HT3) (6 weeks)

Year 7

Teaching	Assessment
Shapes, angles, co-ordinates • Recognising and naming different types of angle • Measuring angles • Calculating angles • Investigating properties of parallel lines • Recognising and naming different types of quadrilateral • Recognising line symmetry • Plotting coordinates in 4 quadrants **Surveys and experiments** • Planning and conducting a survey • Conducting a mathematical experiment • Using an appropriate type of data for a given purpose • Exploring the results of a large number of trials • Using coins and dice to produce random outcomes • Estimating a probability **Symmetry Homework Project** **Mental and written calculations** • Organising a calculation so that you can work it out mentally • Using the = key to change the order of operations • Using inverse operations to check a calculation • Using a calculator to find remainders after division • Using remainders when solving problems • Multiplying and dividing using written methods • Estimating the value of calculations	**Half-term Assessment** • [A1] Addition and subtraction • [A2] Multiplying and dividing • [A3] Doubling and halving • [A4] Fractions of amounts • [A5] Time calculations • [A6] Substitution • [A7] Area and perimeter • [A8] Naming shapes • [B1] Drawing lines of symmetry • [B2] Recognising angle types • [B3] Calculating missing angles • [B4] Co-ordinates • [B5] Constructing two-way tables • [B6] Questionnaires • [B7] Probability • [B8] Finding missing values • [B9] Long multiplication • [B10] Using calculations • [B11] Calculating with decimals • [B12] Simplifying expressions • [B13] Shape problems involving algebra

Spring Second Half Term (HT4) (6 weeks)

Year 7

Teaching	Assessment
Expressions, equations, formulae • Simplifying algebraic expressions • Solving equations using inverse operations • Expanding brackets • Using algebra to describe a mapping • Completing a mapping diagram **Measures, triangles and 3D solids** • Approximating sizes of everyday objects in metric units • Reading scales on a variety of instruments • Converting between different metric units • Constructing a net for a solid shape • Finding the surface area of a solid shape • Relating the number of vertices, faces and edges of a solid shape • Recognising and naming different types of triangle • Defining a triangle • Constructing a triangle using SAS or ASA • Drawing solid shapes on plain paper • Drawing solid shapes on isometric paper **Fractions, ratio and proportion** • Calculating a fraction of an amount • Calculating a percentage of an amount • Adding fractions • Subtracting fractions • Expressing a proportion as a fraction, decimal or percentage • Comparing proportions • Comparing two quantities using a ratio • Simplifying a ratio and sharing an amount in a given ratio	**Half-term Assessment** • [A1] Addition and subtraction • [A2] Multiplying and dividing • [A3] Doubling and halving • [A4] Fractions of amounts • [A5] Time calculations • [A6] Substitution • [A7] Area and perimeter • [A8] Naming shapes • [B1] Simplifying ratio • [B2] Sharing in a given ratio • [B3] Comparing percentages of amounts • [B4] Calculating percentages of amounts • [B5] Properties of 3D shapes • [B6] Recognising appropriate metric measurements • [B7] Converting between metric measurements • [B8] Solving equations • [B9] Expand and simplify expressions • [B10] Shape problems involving algebra

Summer First Half Term (HT5) (5 weeks)

Year 7

Teaching	Assessment

Functions and graphs

- Plotting and drawing the graph of an equation
- Recognising the graph of an equation
- Using graphs to convert one quantity into another
- Using graphs to solve equations

Transformations

- Reflecting points and lines in a variety of mirror lines
- Describing a translation
- Applying a translation to a shape
- Using coordinates to describe a translation
- Describing a rotation
- Rotating a shape using tracing paper
- Rotating a shape on a rectangular grid
- Mapping one point to another under a rotation

Using statistics to compare Dataa

- Comparing data using charts
- Comparing data using an average and the range
- Applying your knowledge of statistics to solve problems

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 7

Teaching	Assessment
Fractions of amounts and proportionality • Using a diagram to multiply a fraction by an integer • Multiplying a fraction by an integer without a diagram • Cancelling when multiplying a fraction by an integer • Recognising direct proportion • Calculating unknown values using direct proportion • Exploring the connection between direct proportion and graphs **Formulae and real-life graphs** • Finding expressions and formulae in a variety of situations • Interpreting the information shown by a graph • Using an equation to represent a problem • Using the solution of the equation to solve the problem **Symmetry** • Exploring rotational symmetry • Investigating the connection between line symmetry and reflection • Exploring the combined effect of reflection and translation • Applying your knowledge to solve problems	**Half-term Assessment** • [A1] Addition and subtraction • [A2] Multiplying and dividing • [A3] Doubling and halving • [A4] Fractions of amounts • [A5] Time calculations • [A6] Substitution • [A7] Area and perimeter • [A8] Naming shapes • [B1] Drawing a conversion graph • [B2] Naming vertical/horizontal lines • [B3] Reflecting in a mirror line • [B4] Describing translations • [B5] Proportion • [B6] Reading from a chart • [B7] Multiplying by a fraction • [B8] Patterns and nth term • [B9] Order of rotational symmetry

Autumn First Half Term (HT1) (8 weeks)

Year 7

Teaching	Assessment
Sequences and functions • Drawing a dot pattern • Finding and using a term-to-term rule • Recognising increasing and decreasing sequences • Using function machines • Using functions to make sequences **The Number system: integers and decimals** • Reading whole numbers with more than 3 digits • Adding and subtracting whole numbers • Multiplying and dividing by 10, 100 and 1000 • Rounding numbers to the nearest 10, 100 or 1000 • Finding multiples of a number • Finding all of the factors of a number • Finding all of the prime numbers less than 100 • Finding square numbers • Using a number line for positive and negative numbers • Adding and subtracting using a number line • Multiplying and dividing decimals by 10, 100 and 1000 • Adding and subtracting decimals • Reading decimals from a number line • Ordering decimals • Rounding decimals to the nearest whole number • Rounding decimals to one decimal place **Length, area, perimeter** • Measuring to the nearest millimetre • Converting between millimetres, centimetres and metres • Calculating the perimeter of a figure • Finding and estimating areas by counting squares • Finding the area of a rectangle • Converting between square centimetres and square millimetres • Finding the areas of shapes based on rectangles	**Half-term Assessment** • [A1] Addition & Subtraction • [A2] Multiplication & Division • [A3] Long Multiplication • [A4] Doubling & Halving • [A5] Fraction of an amount • [A6] Time • [A7] Area & Perimeter • [A8] Area & Perimeter • [A9] Substitution • [A10] Names and properties of shapes • [B1] Number Sequence Machine • [B2] Number Sequence Machine • [B3] Ordering Numbers • [B4] Multiples • [B5] Money • [B6] Money • [B7] Money • [B8] Directed Numbers • [B9] Area & Perimeter • [B10] Ordering Numbers • [B11] Measuring a line • [B12] Money (adding decimals) • [B13] Factors • [B14] Factors • [B15] Prime Numbers • [B16] Multiples

Autumn Second Half Term (HT2) (7 weeks)

Year 7

Teaching	Assessment
Multi-step calculations, fractions and percentages • Working out calculations involving more than one operation • Working out calculations involving brackets • Identifying when to use brackets in calculations • Finding equivalent fractions • Comparing fractions • Changing between improper fractions and mixed numbers • Solving division problems using fractions • Finding the square and square root of a number • Working out calculations involving squares and square roots • Using your calculator for complex calculations • Checking calculator answers by estimation • Converting between fractions and decimals • Describing amounts as percentages • Representing a percentage on a diagram • Changing between fractions, decimals and percentages **Processing and representing Data, probability** • Finding the mode and modal class of some data • Finding the median and mean of some data • Finding the range of some data • Describing situations involving chance • Identifying the possible outcomes for a situation • Recognising when the outcomes are equally likely • Calculating the probability of an event for equally likely outcomes • Interpreting and drawing pictograms and bar charts • Interpreting a compound bar chart • Interpreting pie charts **Formulae, functions and equations** • Using symbols to represent numbers • Solving problems using symbols • Using function machines • Using inverse functions • Using inverse operations to solve problems	**Half-term Assessment** • [A1] Addition & Subtraction • [A2] Multiplication & Division • [A3] Written Multiplication • [A4] Doubling & Halving • [A5] Fraction of an amount • [A6] Time • [A7] Area & Perimeter • [A8] Area & Perimeter • [A9] Substitution • [A10] Names and properties of shapes • [B1] Bidmas • [B2] Square roots • [B3] Fractions • [B4] Shaded fractions • [B5] Equivalent fractions • [B6] Averages • [B7] Bar charts and pictograms • [B8] Probability • [B9] Bar chart • [B10] Using symbols • [B11] Substitution

Spring First Half Term (HT3) (6 weeks)

Year 7

Teaching	Assessment
Shapes, angles, co-ordinates • Describing different types of angles • Estimating angles • Measuring and drawing angles • Calculating angles on a straight line, round a point and in a triangle • Describing different types of triangles using their properties • Recognising line symmetry and reflecting in a mirror line • Recognising parallel lines and the different types of quadrilateral • Plotting coordinates in four quadrants **Surveys and experiments** • Planning and conducting a survey • Conducting a mathematical experiment • Using primary and secondary data • Exploring outcomes that are equally likely or not equally likely • Investigating the results of a large number of trials • Estimating a probability from a number of trials **Symmetry Homework Project** **Mental and written calculations** • Adding and subtracting numbers mentally • Multiplying numbers mentally • Testing for divisibility • Dividing numbers mentally • Using the = key to change the order of operations • Using inverse operations to check a calculation • Using a calculator to find remainders after division • Using remainders when solving problems • Multiplying and dividing by a single-digit number using written methods • Solving problems involving money • Multiplying and dividing by multiples of 10, 100 and 1000 • Multiplying by a two-digit number using written methods	**Half-term Assessment** • [A1] Addition & Subtraction • [A2] Multiplication & Division • [A3] Written Multiplication • [A4] Doubling & Halving • [A5] Fraction of an amount • [A6] Time • [A7] Area & Perimeter • [A8] Area & Perimeter • [A9] Substitution • [A10] Names and properties of shapes • [B1] Symmetry • [B2] Reflection • [B3] Naming angles • [B4] Measuring angles • [B5] Data collection sheet • [B6] Two way tables • [B7] Two-digit addition and subtraction • [B8] Working backwards in addition and subtraction • [B9] 3- by 2- digit multiplication • [B10] Solving problems with decimals • [B11] Multiplication problems with money • [B12] Division problems with money • [B13] Written division

Spring Second Half Term (HT4) (6 weeks)

Year 7

Teaching	Assessment
Expressions, equations, formulae • Finding the value of an expression • Simplifying expressions in algebra • Solving equations using inverse operations • Using 2-step function machines • Using functions to make sequences • Writing and simplifying a formula • Using a formula **Measures, triangles and 3D solids** • Approximating sizes of everyday objects in metric units • Reading scales on a variety of instruments • Converting between different metric units • Calculating with time using the 12- and 24-hour clocks • Constructing a net for a cube or cuboid • Finding the surface area of a cube or cuboid • Constructing the net for a triangular prism • Constructing the net for a square-based pyramid • Recognising and naming different types of triangle • Constructing different triangles using a ruler and protractor • Solving problems using scale drawings • Drawing solid shapes on plain paper • Drawing solid shapes on isometric paper **Fractions, ratio and proportion** • Calculating a fraction of an amount • Calculating a percentage of an amount • Adding fractions • Subtracting fractions • Expressing a proportion as a fraction, decimal or percentage • Comparing proportions • Comparing two quantities using a ratio • Simplifying a ratio and sharing an amount in a given ratio	**Half-term Assessment** • [A1] Addition & Subtraction • [A2] Multiplication & Division • [A3] Written Multiplication • [A4] Doubling & Halving • [A5] Fraction of an amount • [A6] Time • [A7] Area & Perimeter • [A8] Area & Perimeter • [A9] Substitution • [A10] Names and properties of shapes • [B1] Expressions • [B2] Solving equations • [B3] Metric conversion • [B4] 3D shapes and their nets • [B5] Fraction of amounts • [B6] Comparing % of amounts • [B7] Ratio (sharing, simplifying, shading in a given ratio)

Summer First Half Term (HT5) (5 weeks)

Year 7

Teaching	Assessment

Functions and graphs

- Using a graph to convert one quantity into another
- Using a graph to solve an equation
- Interpreting the information shown by a distance-time graph
- Interpreting the information shown by a speed-time graph

Transformations

- Reflecting points and shapes in a variety of mirror lines
- Reflecting shapes on a coordinate grid
- Describing a translation
- Translating a shape
- Describing a rotation
- Rotating a shape using tracing paper
- Rotating a shape on a coordinate grid

Using statistics to compare Dataa

- Comparing data using charts
- Comparing data using an average and the range
- Applying your knowledge of statistics to solve problems

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 7

Teaching	Assessment
Fractions of amounts and proportionality • Using a diagram to multiply a fraction by a whole number • Multiplying a fraction by a whole number without a diagram • Recognising the relationship between proportion and ratio • Calculating unknown values using ratios • Solving problems involving proportion **Formulae and real-life graphs** **Symmetry** • Recognising and describing rotational symmetry • Investigating the connection between line symmetry and reflection • Recognising line symmetry • Investigating regular shapes • Applying your knowledge to solve problems	**Half-term Assessment** • [A1] Addition & Subtraction • [A2] Multiplication & Division • [A3] Written Multiplication • [A4] Doubling & Halving • [A5] Fraction of an amount • [A6] Time • [A7] Area & Perimeter • [A8] Area & Perimeter • [A9] Substitution • [A10] Names and properties of shapes • [B1] Conversion charts • [B2] Reading straight line graphs • [B3] Reflection • [B4] Describing transformations • [B5] Rotation • [B6] Finding fractions of amounts • [B7] Worded multiplication problems • [B8] Interpreting graphs and charts • [B9] Spotting rotational symmetry

Autumn First Half Term (HT1) (8 weeks)

Year 8

Teaching	Assessment
Place value, rounding, calculations • Working with positive and negative powers of 10 • Multiplying and dividing by powers of 10 • Writing numbers in standard form • Recognising and using reciprocals • Understanding the effects of multiplying and dividing positive numbers by numbers between 0 and 1 • Rounding numbers appropriately for the question • Writing numbers to a given number of significant figures • Using rounding to make estimates **Expressions** • Distinguishing between equations, formulae and functions • Identifying and using an identity • Using negative indices • Using the index laws in algebra and with standard form • Expanding single brackets in more complicated algebraic expressions • Factorising expressions by taking out common factors • Expanding pairs of brackets • Factorising quadratic expressions • Solving quadratic equations by factorising **Angles, polygons, circles and compound shapes** • Finding the sum of the exterior angles of a polygon • Finding the sum of the interior angles of a polygon • Finding the angle between a radius and tangent • Proving statements in geometry • Finding the perimeter of compound 2-D shapes • Finding the area of compound 2-D shapes • Naming the different parts of a circle • Finding the circumference and area of a circle • Finding the length of an arc • Finding the area of a sector	**Half-term Assessment** • [A1] Number skills • [A2] Rounding • [A3] Negative numbers • [A4] Averages • [A5] Solving equations • [A6] Fraction/decimal/ percentages • [A7] Four operations of fractions • [A8] Product of prime factors • [A9] Area of triangle • [A10] Area of 2D shapes • [B1] Multiplying and dividing 10,100,1000 • [B2] Multiplying and dividing decimals • [B3] Estimation • [B4] Standard Form • [B5] Simplifying Algebra • [B6] Constructing Equations • [B7] Simplifying Algebra • [B8] Expanding and Factorising • [B9] Laws of Indices • [B10] Perimeter • [B11] Area of a circle • [B12] Length or arc

Autumn Second Half Term (HT2) (7 weeks)

Year 8

Teaching	Assessment
Collecting and processing data • Identifying possible sources of bias and minimising them • Organising data into grouped frequency tables • Determining whether two sets of data are correlated • Drawing a line graph to see how data changes over time • Understanding which average to use for data • Representing data in a stem and leaf diagram **Factors, powers and calculating with fractions** • Writing a number as a product of primes • Writing fractions and square and cube roots using index notation • Calculating approximate values for square roots and cube roots • Simplifying expressions that involve surds • Multiplying fractions by fractions • Dividing fractions by fractions using the inverse • Finding fractions of quantities • Adding and subtracting fractions using efficient methods • Understanding that a recurring decimal is an exact fraction • Converting a recurring decimal to a fraction **Algebraic fractions, equations and inequalities** • Finding and identifying equivalent algebraic fractions • Adding and subtracting algebraic fractions • Solving linear inequalities • Representing inequalities on a number line • Representing the region described by several inequalities on a graph • Solving pairs of simultaneous equations by a graphical method • Solving pairs of simultaneous equations by an algebraic method	**Half-term Assessment** • [A1] Number skills • [A2] Rounding • [A3] Negative numbers • [A4] Averages • [A5] Solving equations • [A6] Fraction/decimal/ percentages • [A7] Four operations of fractions • [A8] Product of prime factors • [A9] Area of triangle • [A10] Area of 2D shapes • [B1] Scatter Graphs • [B2] Stem and Lead Diagrams • [B3] Prime Factors • [B4] Square root Estimation • [B5] Laws of Indices • [B6] Calculating with Fractions • [B7] Mixed Number Calculation • [B8] Solving Equations • [B9] Inequalities - Number Line • [B10] Solving Inequalities

Spring First Half Term (HT3) (6 weeks)

Year 8

Teaching	Assessment
Transformations and scale drawing • Finding the mirror line for a reflection • Finding the centre of rotation and the angle of rotation • Describing a single transformation that can replace a combination of transformations • Using scales • Interpreting scaled areas • Enlarging a shape using negative and fractional scale factors • Finding the scale factor of enlargement • Finding the centre of enlargement • Finding area and volume scale factors **Trial and improvement, proportion and formulae** • Using a calculator to find approximate solutions to an equation • Using a spreadsheet to find approximate solutions to an equation • Solving problems involving more complicated formulae • Changing the subject of a formula • Writing a formula from a sentence • Solving problems of direct proportion numerically • Representing direct proportion relationships as equations and graphically • Solving problems involving direct proportion	**Half-term Assessment** • [A1] Number skills • [A2] Rounding • [A3] Negative numbers • [A4] Averages • [A5] Solving equations • [A6] Fraction/decimal/ percentages • [A7] Four operations of fractions • [A8] Product of prime factors • [A9] Area of triangle • [A10] Area of 2D shapes • [B1] Translation • [B2] Enlargement • [B3] Describing Enlargements • [B4] Combining Transformations • [B5] Proportion Calculation • [B6] Constructing Equations • [B7] Solving Problems with Money • [B8] Rearranging Formula • [B9] Constructing Equations

Spring Second Half Term (HT4) (6 weeks)

Year 8

Teaching	Assessment
Fractions, percentages and ratio • Expressing one number as a percentage of another • Increasing and decreasing an amount by a percentage • Using multiplicative methods to solve percentage change problems • Using mental strategies to solve problems involving integers • Using mental strategies to solve problems using fractions,decimal and percentages • Using powers and roots • Estimating to check solutions to problems • Dividing a quantity in a given ratio • Comparing two ratios • Understanding the ratio properties of similar 2-D shapes • Solving problems using direct and indirect proportion **Constructions, loci and Pythagoras** • Constructing the circumcircle of a triangle • Constructing the inscribed circle of a triangle • Recognising the conditions for congruence • Proving that two triangles are congruent • Identifying the hypotenuse in a right-angled triangle • Using Pythagoras theorem • Finding the length of a line joining two coordinate points • Solving problems involving loci	**Half-term Assessment** • [A1] Number skills • [A2] Rounding • [A3] Negative numbers • [A4] Averages • [A5] Solving equations • [A6] Fraction/decimal/ percentages • [A7] Four operations of fractions • [A8] Product of prime factors • [A9] Area of triangle • [A10] Area of 2D shapes • [B1] Percentage change • [B2] Scales • [B3] Sharing in a given ratio • [B4] Multiplying decimals • [B5] Using ratios • [B6] Constructions • [B7] Pythagoras

Summer First Half Term (HT5) (5 weeks)

Year 8

Teaching	Assessment

Statistical investigations

- Calculating estimates for the mean and range of grouped data
- Identifying the modal class interval and the class interval that includes the median
- Drawing cumulative frequency graphs
- Finding the median, lower and upper quartiles and the interquartile range
- Drawing box plots
- Interpreting more complex graphs and diagrams
- Testing hypotheses
- Comparing two or more distributions
- Writing a hypothesis
- Planning a statistical investigation to solve a problem

Written and calculator methods

- Using written methods for calculating with integers and decimals
- Rounding and estimating when using a calculator
- Using a calculator to find powers and roots
- Using fraction, and reciprocal keys
- Using a calculator for money and percentage calculations
- Using a calculator for conversions, such as exchange rates and measurement problems

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 8

Teaching	Assessment
Holiday Project **Sequences, functions and graphs** • Generating sequences from the term-to-term rule using ICT • Generating quadratic sequences from the position-to-term rule • Generating sequences from practical problems • Finding the nth term of an arithmetic sequence • Finding the nth term of a quadratic sequence • Solving distancetime problems • Drawing graphs of linear functions • Giving plausible explanations for non-linear graphs • Sketching graphs to represent a variety of situations • Plotting the graph of a linear function given in the form **3D solids, measures and trigonometry** • Drawing plans and elevations of more complex 3-D shapes • Drawing isometric views of shapes using plans and elevations • Identifying the opposite and adjacent sides in a right-angled triangle • Using trigonometry to find a side in a right-angled triangle • Using trigonometry to find an angle in a right-angled triangle • Finding the volume and surface area of a prism • Finding the volume and surface area of a cylinder • Solving problems involving prisms • Converting between measurements of area • Converting between measurements of volume • Finding the least and greatest length of a measurement • Solving problems using compound units • Converting between compound units **Probability and experiments** • Deciding whether events are mutually exclusive • Deciding whether two events are independent • Working out the probability of two independent events both occurring • Drawing a tree diagram to show two or more events • Using tree diagrams to solve probability problems • Using experimental data to estimate probability • Understanding the difference between theoretical and experimental probability • Understanding the effect of repeating an experiment many times	**Half-term Assessment** • [A1] Number skills • [A2] Rounding • [A3] Negative numbers • [A4] Averages • [A5] Solving equations • [A6] Fraction/decimal/ percentages • [A7] Four operations of fractions • [A8] Product of prime factors • [A9] Area of triangle • [A10] Area of 2D shapes • [B1] Questionnaires • [B2] Cumulative frequency • [B3] Using a calculator • [B4] Currency conversion • [B5] Speed distance time graph • [B6] Using Nth term • [B7] Probability

Autumn First Half Term (HT1) (8 weeks)

Year 8

Teaching	Assessment
Place value, rounding, calculations • Working with positive powers of 10 • Multiplying and dividing by powers of 10 • Ordering numbers less than 1 using inequality signs • The effects of multiplying and dividing by numbers between 0 and 1 • Rounding numbers to a given degree of accuracy • Using rounding to make estimates **Expressions** • Distinguishing between equations, formulae and functions • Identifying and using an identity • Using the index laws in algebra • Expanding single brackets in more complicated algebraic expressions • Simplifying expressions by taking out common factors • Adding, subtracting and multiplying algebraic expressions **Angles, polygons, circles and compound shapes** • Recognising different types of polygon • Finding the sum of the interior angles of a polygon • Finding interior and exterior angles of a regular polygon • Finding the number of sides of a regular polygon • Finding the perimeter and area of compound 2-D shapes • Identifying different parts of a circle • Finding the circumference of a circle • Finding the area of a circle	**Half-term Assessment** • [A1] Addition and Subtraction • [A2] Ordering +/- integers • [A3] Collecting Like Terms • [A4] Long Multiplication/Division • [A5] Adding/subtracting fractions • [A6] Percentages of Amounts • [A7] Time Calculations • [A8] Area & Perimeter • [B1] Multiplying and dividing decimals • [B2] Circumference of a circle • [B3] Estimation • [B4] Multiplying Decimals • [B5] Simplifying Expressions • [B6] Internal/External angles of polygons • [B7] Perimeter & Area • [B8] Area of a circle • [B9] Compound Area

Autumn Second Half Term (HT2) (7 weeks)

Year 8

Teaching	Assessment
Collecting and processing data • Identifying possible sources of bias and minimising them • Organising data into grouped frequency tables • Drawing a pie chart to represent data • Determining whether two sets of data are correlated • Drawing a line graph to see how data changes over time • Representing and using data in a two-way table • Knowing which average to use for data • Calculating an estimate for the mean of grouped data • Identifying the class interval where the median lies for grouped data • Identifying the modal class interval for grouped data • Finding an estimate of the range for grouped data **Factors, powers and calculating with fractions** • Writing numbers as the product of prime factors • Using index notation • Calculating approximate ranges for square roots and cube roots • Using the index laws • Using prime factors to find the highest common factor and lowest common multiple • Multiplying a fraction by a fraction • Dividing a fraction by a fraction by multiplying by the reciprocal • Problem-solving involving fractions • Converting between mixed numbers and improper fractions • Adding and subtracting fractions using efficient methods • Converting between fractions and decimals **Algebraic fractions, equations and inequalities** • Finding and identifying equivalent algebraic fractions • Adding and subtracting algebraic fractions • Forming more complex equations • Choosing efficient methods to solve more complex equations • Solving equations with unknowns on both sides	**Half-term Assessment** • [A1] Addition and Subtraction • [A2] Simplifying Ratios • [A3] Simplifying Expressions • [A4] Multiplying and dividing decimals • [A5] Adding/Subtracting Fractions • [A6] Percentages of Amounts • [A7] Conversions • [A8] Perimeter & Area • [B1] Scatter Graphs • [B2] Mean - Grouped Freq Table • [B3] Multiplying and dividing fractions • [B4] Squares, cubes and Roots • [B5] LCM & HCF • [B6] Solving Equations • [B7] Constructing Equations

Spring First Half Term (HT3) (6 weeks)

Year 8

Teaching	Assessment
Transformations and scale drawing • Carrying out reflections, rotations and translations • Carrying out combinations of transformations • Interpreting the scale on a map • Using the scale on a map to calculate distances • Enlarging a shape given a scale factor and a centre of enlargement • Recognising key features of an enlargement • Finding the scale factor of an enlargement • Finding the centre of an enlargement **Trial and improvement, formulae** • Using a trial and improvement method to estimate solutions to an equation • Changing the subject of a formula • Using more complex formulae • Writing a formula from a sentence • Deriving a new formula from a known formula • Recognising units of length, area and volume in an expression • Solving problems of direct proportion using algebraic methods • Relating a linear function or equation to a graph • Relating algebraic solutions of linear equations to graphs	**Half-term Assessment** • [A1] Integer Calculation • [A2] Averages • [A3] Solving Equations • [A4] Types of Numbers • [A5] Converting between Fractions and Decimals • [A6] Percentages of Amounts • [A7] Polygons • [A8] Area and Circumference of a circle • [B1] Reflective/Rotational Symmetry • [B2] Transformation • [B3] Enlargements • [B4] Describing Enlargements • [B5] Combining Transformations • [B6] Proportion Calculation • [B7] Substitution • [B8] Direct Proportion • [B9] Substituting into Formulae

Spring Second Half Term (HT4) (6 weeks)

Year 8

Teaching	Assessment
Fractions, percentages and ratio • Expressing one number as a percentage of another • Increasing and decreasing an amount by a percentage • Solving problems involving percentage changes • Using mental strategies to solve word problems • Using factors, powers and roots in solving problems • Using known facts to derive unknown facts • Changing between proportions as fractions and ratios • Changing between proportions as percentages and ratios • Interpreting ratios • Solving problems involving ratio and proportion **Constructions, loci and views of 3D solids** • Constructing the circumference of a triangle • Constructing the perpendicular from a point to a line • Constructing a perpendicular at a point on a line • Constructing 2-D shapes • Describing a 3-D shape using a plan, front elevation and side elevation • Visualising a 3-D shape given its plan, front elevation and side elevation • Visualising planes of symmetry • Finding the locus of a set of points • Solving simple problems involving loci	**Half-term Assessment** • [A1] Integer Calculations • [A2] Averages • [A3] Solving Equations • [A4] Types of Numbers • [A5] FDP Conversions • [A6] Calculating with Fractions • [A7] Prime Factors • [A8] Area • [B1] Unitary method • [B2] Scales and ratio • [B3] Equivalent ratios • [B4] Sharing in a given ratio • [B5] Percentages of amounts • [B6] Percentage reductions • [B7] Best value • [B8] Constructing triangles • [B9] Plans and elevations

Summer First Half Term (HT5) (5 weeks)

Year 8

Teaching	Assessment

Statistical investigations

- Planning a statistical investigation to answer a question
- Interpreting more complex graphs and diagrams
- Comparing two or more distributions

Written and calculator methods

- Using written methods for calculating with integers and decimals
- Using problem-solving skills with calculations involving money
- Using a calculator for powers and roots
- Checking answers for correct order of magnitude
- Rounding answers appropriately
- Using a calculator for converting currencies and units of measurement

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 8

Teaching	Assessment
Holiday Project **Sequences, functions and graphs** • Generating sequences from the term-to-term rule and using ICT • Generating sequences from practical problems • Finding the nth term of an arithmetic sequence • Solving distancetime problems • Finding linear equations for graphs of real situations • Drawing graphs of linear functions • Giving possible explanations for non-linear graphs • Calculating the gradient and y-intercept from a straight line graph • Interpreting and comparing lines given by equations in the form y=mx+c • Plotting the graph of a linear function given in the form ay+bx+c=0 • Finding the coordinates of the midpoint of a line **3D solids, measures and Pythagoras** • Labelling a right-angled triangle • Using Pythagoras' theorem • Finding the length of a side of a right-angled triangle • Recognising a prism • Finding the volume of a prism • Finding the volume of a cylinder • Finding the surface area of a prism • Converting from one unit to another • Changing mm2 to cm2, cm2 to m2 and m2 to km2 • Changing cm3 to m3 and the link to ml • How to solve problems that involve density and speed **Probability and experiments** • Deciding whether outcomes are mutually exclusive • Using relative frequency to work out probability • Using experimental data to estimate probability • Understanding the difference between theoretical and experimental probability • Understanding the effect of repeating an experiment many times	**Half-term Assessment** • [A1] Integer Calculations • [A2] Probability • [A3] Equations • [A4] Ratio and Proportion • [A5] Calculating with Fractions • [A6] Area & Perimeter • [B1] Solving real-life problems with time and money • [B2] Using a calculator for complex calculations • [B3] Using nth term rules • [B4] Finding nth term rule • [B5] Drawing graphs of straight line • [B6] Converting units • [B7] Converting units • [B8] Volume of prisms • [B9] Pythagoras Theorem • [B10] Probability problems

Autumn First Half Term (HT1) (8 weeks)

Year 8

Teaching	Assessment
Integers, powers, roots • Multiplying and dividing integers • Finding lowest common multiples • Finding highest common factors • Finding prime factors • Finding squares and square roots • Cubing numbers • Finding the cube root of a number • Using power notation • Using a calculator to find square roots and cube roots **Sequences** • Finding term-to-term rules for arithmetic sequences • Generating a sequence from a term-to-term rule • Generating a sequence from a position-to-term rule • Writing a position-to-term rule using algebra • Using the relationship between a term-to-term rule and a rule for the nth term **Angles, shapes and constructions** • Identifying alternate and corresponding angles • Proving that the angles of a triangle add up to 180 and that the angles of any quadrilateral add up to 360 • Knowing that the exterior angle of a triangle is equal to the sum of the two interior opposite angles • Constructing a perpendicular bisector • Bisecting an angle • Constructing a perpendicular from a point to a line • Constructing a perpendicular from a point on a line • Classifying quadrilaterals by their geometric properties • Calculating the midpoint of a line segment	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding & subtracting fractions • [A6] Percentages of amounts • [A7] Fractions of amounts • [A8] Area & perimeter of a rectangle • [B1] Generating a sequence from nth term • [B2] Prime factorisation • [B3] Angle calculations with reasons • [B4] Adding/subtracting +/- numbers • [B5] Substitution • [B6] Multiplying with +/- numbers • [B7] Using negative numbers • [B8] Alternate and corresponding angles

Autumn Second Half Term (HT2) (7 weeks)

Year 8

Teaching	Assessment
Probability • Recognising certain and impossible outcomes and stating their probabilities • Calculating the probability of an event for equally likely outcomes • Understanding that random processes are unpredictable • Using experimental data to estimate probabilities • Understanding the effect of repeating an experiment many times • Comparing theoretical and experimental probabilities • Finding the probability of an event not occurring • Using diagrams to record all possible outcomes for a single event • Using diagrams to record all possible outcomes for two successive events **Fractions, decimals and percentages** • Using division to convert fractions to decimals • Understanding that a recurring decimal is a fraction • Ordering fractions • Calculating percentages of numbers, quantities and measurements • Using percentages to solve problems • Finding the outcome of a percentage increase or decrease • Adding and subtracting fractions with different denominators • Multiplying and dividing whole numbers by fractions • Using facts you know to answer unfamiliar questions **Expressions, equations and formulae** • Identifying the correct order for calculations involving algebra • Simplifying expressions by collecting like terms • Expanding simple expressions involving brackets • Writing expressions using index notation • Substituting values into expressions and formulae • Deriving simple formulae • Forming and solving equations	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding & subtracting fractions • [A6] Percentages of amounts • [A7] Fractions of amounts • [A8] Area & perimeter of a triangle • [B1] Percentage of an amount • [B2] Converting F,D and P • [B3] Expanding and simplifying expressions • [B4] Probability • [B5] Expanding and simplifying expressions • [B6] Probability • [B7] Writing an expression

Spring First Half Term (HT3) (6 weeks)

Year 8

Teaching	Assessment
Symmetry Homework Project **Area, volume, 3D solids** • Calculating the area of triangles, parallelograms and trapeziums • Calculating the area of compound shapes • Drawing plans and elevatioins of 3-D shapes • Identifying nets of cubes and cuboids • Calculating the volume of cuboids and shapes made of cuboids • Calculating the surface area of cuboids and shapes made from cuboids • Making rough conversions between metric and imperial measures • Justifying an appropriate degree of accuracy for a measurement **Functions, mappings and graphs** • Writing a function machine as an equation • Identifying and writing more complex rules linking inputs and outputs • Describing a straight line using an equation • Writing an equation for a straight line in the form y = mx + c • Constructing a mapping diagram from a function machine	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Calculating with fractions • [A6] Percentages of amounts • [A7] Prime factors • [A8] Area and perimeter of a rectangle • [B1] Area of a trapezium • [B2] Problem solving involving area • [B3] Volume of a prism • [B4] Surface area of 3D shapes • [B5] Plans and elevations • [B6] Metric/Imperial conversions • [B7] Function machines • [B8] Straight line graphs

Spring Second Half Term (HT4) (6 weeks)

Year 8

Teaching	Assessment
Place value, rounding, calculations • Multiplying and dividing integers and decimals by 0.1 and 0.01 • Rounding numbers to the nearest mulutiple of a given power of 10 • Rounding numbers to either 1 or 2 decimal places • Rounding decimals to the nearest whole number • Written methods for adding, subtracting, multiplying and dividing involving decimals • Knowing mental strategies for adding, subtracting, multiplying and dividing • Converting between fractions, decimals and percentages • Knowing mental strategies for solving problems involving fractions, decimals and percentages • Estimating the square roots of non-square numbers • Estimating the answer to calculations by rounding • Using a calculator for more complex calculations • Writing answers in a format consistent with the question • Converting time given in decimal format into hours, minutes and seconds **Congruence and tansformations** • Identifying congruent shapes, including triangles and quadrilaterals • Enlarging an object • Describing enlargements • Carrying out combinations of reflections, rotations and translations • Finding the symmetry properties of two-dimensional shapes	**Half-term Assessment** • [A1] Adding & subtracting decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Calculating with fractions • [A6] Percentages of amounts • [A7] Metric conversion • [A8] Area of a triangle • [B1] Functional problems involving division/multiplication • [B2] Calculating the mid-point of two calculations • [B3] Recognise congruent shapes • [B4] Transformations • [B5] Rounding • [B6] Powers of 10 • [B7] Multiplying decimals

Summer First Half Term (HT5) (5 weeks)

Year 8

Teaching	Assessment

Surveys and data

- Knowing different forms that data can take
- Testing a theory
- Identifying inappropriate questions in a survey
- Sampling a population
- Using two-way tables to record data
- Drawing a pie chart by calculating the degrees for each sector
- Drawing bar charts or frequency diagrams as appropriate for discrete and continuous data
- Drawing and interpreting simple line graphs
- Drawing and interpreting scatter graphs
- Understanding that statistics can be misleading
- Calculating the mean, median and mode from a frequency diagram
- Constructing a stem and leaf diagram
- Calculating the range, mean, median and mode from a stem and leaf diagram
- Interpreting different types of graph
- Giving reasons to justify your answers
- Deciding whether a graph displays its data clearly

Ratio, proportion and real-life graphs

- Working out more complex calculations involving brackets and powers
- Recognising the relationship between fractions and ratios
- Simplifying ratios
- Dividing a quantity in a given ratio
- Using the unitary method to solve problems involving ratio
- Spotting incorrect answers in a number of different situations
- Properties of direct proportion
- Using graphs to find the relationship between two variables
- Writing a ratio in the form 1:n
- Converting a ratio to an equation linking two variables

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 8

Teaching	Assessment
Formulae, expressions and graphs • Simplifying algebraic expressions involving brackets • Forming algebraic expressions • Interpreting distancetime graphs • Drawing graphs based on real situations • Giving plausible explanations for the shapes of graphs **Scale drawing, loci and bearings** • Converting between lengths on scale drawings and in real life, given the scale • Drawing diagrams to scale • Interpreting diagrams drawn to scale • Constructing the locus of points from a fixed point • Constructing the locus of points from a fixed line • Knowing when to use solid or dashed lines in locus diagrams • Constructing the locus of points equidistant from a pair of fixed points or lines • Constructing a triangle given the lengths of all three sides • Constructing a shape made of triangles • Measuring three-figure bearings • Drawing diagrams involving three-figure bearings **Collecting and analysing data** • Preparing grouped frequency tables from lists of data • Selecting an appropriate class interval for grouping continuous data • Interpreting more complex graphs • Giving possible reasons for the shapes of graphs • Justifying explanations using the evidence from calculations • Estimating the mean of grouped continuous data • Identifying the modal class of grouped data • Realising that the mean of grouped data is often very close to the mean of the raw data	**Half-term Assessment** • [A1] Multiplying decimals • [A2(A)] Multiplying negatives • [A2(B)] Powers and roots • [A3] Simplifying algebra • [A4] Calculating with fractions • [A5] Percentage increase • [A6] Metric conversion • [A7] Perimeter of a compound shape • [B1] Averages • [B2] Questionnaires • [B3] Drawing pie charts • [B4] Sharing in a given ratio • [B5] Speed distance time graphs • [B6] Constructing triangles • [B7] Bearings • [B8] Averages from a frequency table

Autumn First Half Term (HT1) (8 weeks)

Year 8

Teaching	Assessment
Integers, powers, roots • Adding and subtracting positive and negative integers • Multiplying and dividing positive and negative integers • Finding common factors and the highest common factor (HCF) • Finding common multiples and the lowest common multiple (LCM) • Finding the square root of a number • Cubing a number • Using positive powers **Sequences** • Identifying the term-to-term rule for an arithmetic sequence • Generating a sequence from a term-to-term rule • Generating a sequence from a position-to-term rule • Writing a position-to-term rule using words • Writing a position-to-term rule using algebra **Angles, shapes and constructions** • Knowing that there are 180 on a straight line and in a triangle • Knowing that there are 360 around a point and in a quadrilateral • Identifying vertically opposite angles • Using angle rules to solve problems • Measuring and drawing reflex angles • Constructing a triangle given two sides and the included angle • Construting a triangle given two angles and the included side • Solving problems using constructions • Identifying parallel and perpendicular lines • Classifying quadrilaterals by their geometric properties • Identifying alternate and corresponding angles • Solving angle problems involving parallel lines	**Half-term Assessment** • [A1] Adding and subtracting • [A2] Ordering numbers • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding and subtracting fractions • [A6] Percentages of amounts • [A7] Time calculations • [A8] Area and perimeter of a rectangle • [B1] Angles on a straight line • [B2] Angles at a point • [B3] Angles in a triangle • [B4] Angles in parallel lines • [B5] Completing number sequences • [B6] Number machines and sequences • [B7] Value for money • [B8] Adding and subtracting negative numbers • [B9] Powers and roots

Autumn Second Half Term (HT2) (7 weeks)

Year 8

Teaching	Assessment
Probability • Using probability words to say how likely some events are • Explaining why some events are more likely than others • Calculating experimental probabilities from experimental results • Listing outcomes systematically • Calculating the probability of simple events occuring **Fractions, decimals and percentages** • Expressing one quantity as a fraction of another • Using equivalent fractions • Changing between fractions and decimals • Using division to convert fractions to decimals • Ordering fractions • Converting between percentages and fractions • Converting between percentages and decimals • Finding percentages of quantities • Adding and subtracting fractions with different denominators • Finding fractions of amounts • Multiplying and dividing whole numbers by fractions • Calculating mentally with whole numbers • Recalling fraction and decimal conversions • Using known facts to derive unknown facts **Expressions, equations and formulae** • Writing and finding the power of a number • Identifying the correct order for a calculation • Writing expressions • Substituting into expressions • Solving equations using inverse operations • Solving equations involving brackets • Simplifying expressions by collecting like terms • Expanding expressions involving brackets • Writing formulae using words • Writing formulae using symbols • Using formulae to solve problems	**Half-term Assessment** • [A1] Adding and subtracting • [A2] Ordering numbers • [A3] Simplifying algebra • [A4] Multiplying and dividing • [A5] Adding and subtracting fractions • [A6] Percentages of amounts • [A7] Time calculations • [A8] Area and perimeter of a rectangle • [B1] Probability of shaded squares • [B2] Probability of counters • [B3] Probability expected frequency • [B4] Fraction of an amount • [B5] Decimals as fractions • [B6] Adding and subtracting fractions • [B7] Fraction of an amount • [B8] Fractions as decimals • [B9] Ordering fractions • [B10] Mixed numbers as top heavy fractions

Spring First Half Term (HT3) (6 weeks)

Year 8

Teaching	Assessment
Symmetry Homework Project **Area, volume, 3D solids** • Calculating the perimeter of a rectangle • Calculating the area of rectangles, triangles and parallelograms • Calculating the area of compound shapes • Identifying and drawing nets of cubes and cuboids • Calculating the surface area of cubes and cuboids • Calculating the surface area of a triangular prism • Identifying nets of other 3-D shapes • Understanding what volume is • Knowing that a cubic centimetre is the volume of a cube that has edge length 1 cm • Finding volumes by counting cubic centimetres • Calculating the volume of a cube • Calculating the volume of shapes made of cuboids • Drawing the plans and elevations of 3-D shapes **Functions, mappings and graphs** • Finding the outputs of a two-step function machine • Writing a two-step function using algebra • Finding the equation of a line from coordinates on the line • Using an equation to complete a table of values • Plotting and drawing the graph of a linear equation • Using algebra to describe a mapping • Completing a mapping diagra	**Half-term Assessment** • [A1] Adding and subtracting • [A2] Ordering numbers • [A3] Simplifying algebra • [A4] Multiplying, dividing and powers • [A5] Adding and subtracting fractions • [A6] Percentages of amounts • [A7] Time calculations • [A8] Area and perimeter of a rectangle • [B1] Volume of cuboids • [B2] Area and perimeter of compound shape • [B3] Area of compound shape • [B4] Area of compound shape • [B5] Volume of cuboids • [B6] Volume of cuboids • [B7] Function machines • [B8] Straight lines graph coordinates • [B9] Function machines • [B10] Function machines • [B11] Plans and elevations

Spring Second Half Term (HT4) (6 weeks)

Year 8

Teaching	Assessment
Place value, rounding, calculations • Reading and writing powers of 10 • Multiplying and dividing integers and decimals by 0.1 and 0.01 • Rounding numbers to the nearest 10, 100 and 1000 • Rounding decimals to the nearest whole number • Rounding numbers to 1 or 2 decimal places • Adding, subtracting, multiplying and dividing with whole numbers and decimals • Learning mental strategies for adding, subtracting, multiplying and dividing • Estimating the answer to calculations by rounding • Estimating the square roots of non-square numbers • Converting between fractions, decimals and percentages • Learning mental strategies for solving problems involving fractions, decimals and percentages, without a calculator • Using the wquare and square root keys • Using a calculator for complex calculations • Converting time given in decimal format into hours, minutes and seconds **Symmetry and transformations** • Understanding congruence • Identifying the number of lines of symmetry of a shape • Identifying the order of rotational symmetry of a shape • Finding the scale factor of an enlargement • Enlarging an object by a given scale factor • Reflecting in vertical, horizontal and diagonal lines • Rotating a shape about a centre of rotation • Reflecting, rotating or translating an object on a coordinate grid • Describing translations using column vectors	**Half-term Assessment** • [A1] Adding and subtracting • [A2] Ordering numbers • [A3] Simplifying algebra • [A4] Multiplying, dividing and powers • [A5] Adding and subtracting fractions • [A6] Percentages of amounts • [A7] Time calculations • [A8] Area and perimeter of a rectangle • [B1] Adding and subtracting with money • [B2] Percentage, decimals and fractions • [B3] Worded money problem • [B4] Congruent shapes • [B5] Worded money problem • [B6] Estimation • [B7] Translating a shape • [B8] Reflecting a shape • [B9] Reflecting a shape • [B10] Rounding to nearest 10, 100 • [B11] Rounding to 2dp • [B12] Powers and decimal multiplication

Summer First Half Term (HT5) (5 weeks)

Year 8

Teaching	Assessment

Surveys and data

- Knowing different forms that data can take
- Testing a theory
- Identifying inappropriate questions in a survey
- Sampling a population
- Using an appropriate grouped frequency table]
- Constructing and using a two-way table
- Drawing a pie chart by calculating the degrees for each sector
- Drawing bar charts or frequency diagrams as appropriate for discrete and continuous data
- Drawing and interpreting simple line graphs
- Drawing and interpreting scatter graphs
- Calculating the range, mean, median and mode from a set of data and from a frequency diagram
- Understanding that statistics can be misleading
- Constructing a stem and leaf diagram
- Calculating the range, median and mode from a stem and leaf diagram
- Interpreting different types of graph and chart
- Giving reasons to justify your answers
- Deciding whether a graph displays its data clearly

Ratio, proportion and real-life graphs

- Working out complex calculations involving brackets and powers
- Setting out complex calculations in stages
- Spotting incorrect answers in a number of different situations
- Recognising direct proportion
- Calculating unknown values using direct proportion
- Understanding the relationship between fractions and ratios
- Simplifying ratios
- Using a graph to convert one quantity into another
- Interpreting distance-time graphs

End of Year Exam

Summer Second Half Term (HT6) (7 weeks)

Year 8

Teaching	Assessment
Scale drawing, loci and bearings • Converting between actual distances and scaled measurements • Writing scales as ratios • Describing a three-figure bearing • Measuring three-figure bearings • Drawing diagrams involving three-figure bearings • Constructing the locus of points from a line • Constructing the locus of points from a fixed point • Constructing a triangle given the lengths of all three sides **Collecting and analysing data** • Recording continuous data to a suitable level of accuracy • Preparing grouped frequency tables from lists of data • Selecting an appropriate class interval for grouping data • Finding the modal group • Comparing data using averages and the range • Interpreting more complex graphs • Giving possible reasons for the shape of graphs • Justifying explanations using the evidence from calculations • Caluculating the mean, median, mode and range from a frequency table	**Half-term Assessment** • [A1] Adding and subtracting • [A2] Ordering numbers • [A3] Simplifying algebra • [A4] Multiplying, dividing and powers • [A5] Adding and subtracting fractions • [A6] Percentages of amounts • [A7] Time calculations • [A8] Area and perimeter of a rectangle • [B1] Averages and range • [B2] Questionnaires • [B3] Construct an equilateral triangle • [B4] Drawing a bar chart and pie chart • [B5] Measure a bearing angle • [B6] Grouped frequency tally chart