



Subject: Maths

Year 7	
Theme	Teaching
1 Calculations	<ul style="list-style-type: none"> Use place value to multiply and divide by 10, 100, 1000 etc. Understand that division can also be written as a fraction. Multiply and divide integers and decimals mentally. Use formal written methods for short division.
2 Calculations	<ul style="list-style-type: none"> Divide any whole number by any other whole number accurately using long division. Multiply any whole number by any other whole number using column multiplication. Add and subtract using integers and decimals mentally. Use formal written methods for addition and subtraction.
3 Calculations	<ul style="list-style-type: none"> Understand place value from thousandths through to thousands. Know divisibility tests for the 2, 3, 4, 5, 6, 8, 9 and 10 times tables. Use place value to multiply and divide by 0.1, 0.01, 0.001 etc. Multiply one decimal number by another using column multiplication (scale the problem up to integers first and back down again at the end). Divide decimal numbers by integers using long division. Understand and apply inverse operations to solve problems. Use estimates to check answers are reasonable.
4 Calculations	
5 Time	<ul style="list-style-type: none"> Convert fluently between the 12 and 24 hour clock. Tell the time on a digital clock. Tell the time on an analogue clock. Solve basic functional time problems. Understand the concept of different time zones and use these to convert between instantaneous times in different countries around the world. Solve problems that involve conversions between adjacent units of time i.e. seconds to minutes or minutes to hours. Solve problems using timetables. Understand how to write time in different forms e.g. 1 hour 45 minutes as 1 and 3/4 of an hour or 1.75 hours.
6 Time	
7 2D shape	<ul style="list-style-type: none"> Know that angles on a straight line add to 180 degrees, angles round a point equal 360 degrees and right angles are 90 degrees. Identify the order of rotational symmetry and number of lines of reflectional symmetry within a given shape. Identify a shape from given properties, such as line of symmetry, order of rotational symmetry, parallel sides, number of sides, angle properties etc. Understand and use the terms parallel and perpendicular accurately. Solve angle problems involving both triangles and quadrilaterals. Tessellate a shape, combinations of shapes. Identify which shapes tessellate.
8 2D shape	
9 Number Sense	<ul style="list-style-type: none"> Convert simple fractions to decimals accurately without a calculator Convert decimals into fractions Order negative numbers on a number line Order simple fractions and decimals on a number line Identify equivalent fractions and cancel fractions to their simplest form Order simple fractions and decimals Understand and apply the concept of temperature and money less than zero Add and subtract with negative numbers. Multiply and divide negative numbers. Order fractions by converting to decimals/percentages. Convert a fraction to a percentage using a calculator. Convert a fraction to a percentage by writing them with a denominator of 100 and where this isn't possible, converting them to a decimal number first. Convert a decimal number to a percentage. Convert fractions to decimals accurately with a calculator. Order fractions by writing them with a common denominators (including negative fractions).
10 Number Sense	
11 Number Sense	
12 Algebraic Notation	<ul style="list-style-type: none"> Understand and simplify expressions through multiplication and division with more than one variable. Understand and simplify expressions through multiplication and division with one variable. Understand and simplify expressions (addition and subtraction) with more than one variable by collecting like terms. Understand and simplify expressions (addition and subtraction) with one variable by collecting like terms. Understand the difference between variables, expressions and terms. Write an expression from a problem. Multiply out linear expressions with brackets. Use correct algebraic notation to represent unknown numbers or variables.
13 Algebraic Notation	
14 Fractions	<ul style="list-style-type: none"> Write a fraction in its lowest terms. Identify equivalent fractions. Add and subtract fractions with the same denominator. Add and subtract fractions with different denominators. Convert fluently between improper fractions and mixed numbers. Write one quantity as a fraction of another including when the fraction is less than 1. Multiply and divide with mixed numbers Add and subtract with mixed numbers. Multiply and divide a fraction by a fraction. Multiply and divide an integer by a fraction. Multiply and divide a fraction by an integer. Use calculator and non-calculator methods to find a fraction of an amount.
15 Fractions	
16 Review Week	This will be spent catching reviewing any gaps from the topics studied up to this point.
17 Assessment Week	This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
18 Formulae	<ul style="list-style-type: none"> Substitute positive integers in formulae Interpret the information from substituting into a formula. Understand the difference between a variable, term, expression and formula. Write an expression from a problem. Set up and substitute into a formula from given information. Set up a formula from given information. Substitute into a formula with negative integer values with and without a calculator. Substitute into a formula with fractional values with and without a calculator. Substitute into a formula with decimals with and without a calculator.
19 Formulae	

Year 7	
Theme	Teaching
20 Rounding and Estimating	<ul style="list-style-type: none"> Understand and use estimation to check the validity of answers. Round numbers up to 2 decimal places. Approximate any number by rounding to the nearest 10, 100 or 1 000, 10 000, 100 000 or 1 000 000. Approximate any number with one or two decimal places by rounding to the nearest whole number. Round any number to any given number of decimal places. Round any number to any given number of significant figures. Solve real life problems using estimations and rounding (everything rounded to 1 s.f.).
21 Rounding and Estimating	
22 Measure	<ul style="list-style-type: none"> Convert one metric unit to another. Use a protractor to measure and draw angles, including reflex angles, to the nearest degree. Choose which units and instruments to use for everyday measures. Be able to read and interpret scales on a range of measuring instruments. Measure lengths accurately using a ruler. Convert between metric and imperial measures when given the conversion. Know how to read a map scale and create scales. Draw and interpret scales. Convert numbers using a given scale or scale factor.
23 Measure	
24 Algebraic Notation	<ul style="list-style-type: none"> Write an expression from a problem. Multiply out linear expressions with brackets. Understand and simplify expressions through multiplication and division with more than one variable. Understand and simplify expressions (addition and subtraction) with more than one variable by collecting like terms. Understand and simplify expressions (addition and subtraction) with one variable by collecting like terms. Use correct algebraic notation to represent unknown numbers or variables. Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS) Factorise any expression into a single bracket. Expand and simplify expressions containing more than one single bracket.
25 Algebraic Notation	
26 Percentages	<ul style="list-style-type: none"> Find 5, 10, 25 and 50 percent of a quantity without a calculator. Convert between fractions, decimals and percentages with and without a calculator. Know standard fraction / decimal percentage equivalences (e.g. $\frac{1}{2} = 0.5 = 50\%$, $\frac{1}{4} = 0.25 = 25\%$, $\frac{1}{10} = 0.1 = 10\%$, $\frac{1}{100} = 0.01 = 1\%$). Solve real-life problems using percentages. Increase or decrease a quantity by a percentage without a calculator. Find any percentage of a given quantity without a calculator. Order percentages on a number line. Increase or decrease a quantity by a percentage using a calculator using the multiplier method. Find any percentage of a given quantity using a calculator using the multiplier method.
27 Percentages	
28 Percentages	
29 Assessment Week	This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
30 Review Week	This will be spent catching reviewing any gaps from the topics studied up to this point.
31 Coordinates	<ul style="list-style-type: none"> Know the meaning of horizontal and vertical. Know how to write a coordinate. Know the term origin and its location on a set of axis as well as the coordinate it corresponds to. Understand the x-axis and y-axis on a coordinate grid and know which value in a coordinate corresponds to each axis. Plot and read positive coordinates. Plot and read coordinates in all four quadrants. Use coordinates with the properties of shapes to solve problems for missing vertices of shapes on a set of axis
32 Coordinates	
33 Area and Perimeter	<ul style="list-style-type: none"> Find a missing length when given the area or perimeter and other lengths in a square, rectangle or parallelogram. Calculate the area of simple rectilinear compound shapes. Recognise that shapes with the same area can have different perimeters and vice versa. Calculate the area of rectangles, triangles, parallelograms. Know that the area of a rectangle is given by the formula $\text{area} = \text{length} \times \text{width}$ Work out the perimeter of any shape (when given the measurements) Solve problems linking to other contexts such as cost of a gardening project that draw on using area and perimeter. Find a missing length when given the area or perimeter and other lengths including with triangles. Write an algebraic expression for the area/perimeter of a shape. Convert to consistent units of measurement within the metric system where necessary to solve area and perimeter problems. Know that when solving area and perimeter problems, the units of measurement must be consistent.
34 Area and Perimeter	
35 Area and Perimeter	
36 Catch up/Review/problem solving	These weeks are to be used to catch up any content not yet covered, review the content from Y7 thus far and fill any gaps, and develop problem solving skills through rich tasks.
37 Catch up/Review/problem solving	
38 3D Shape	<ul style="list-style-type: none"> Recognise and name 3D objects. Recognise vertices, edges and faces. Construct isometric drawings of 3D objects. Draw the net of a 3D object. Draw plans and elevations for 3D objects.
39 3D Shape	



Subject: Maths

Year 8	
Theme	Teaching
1	Types of Number <ul style="list-style-type: none"> Round a number to any number of decimal places. Round numbers and measures to an appropriate degree of accuracy and understand this statement. Round to any given number of significant figures. Multiply and divide numbers by 0.1, 0.01, 0.001, 10, 100 and a 1000. Calculate square and square roots (up to 15 squared without a calculator) with and without a calculator. Estimate Square Roots Calculate cubes and cube roots (1-6 and 10 cubed without a calculator) with and without a calculator. Know tests of divisibility for 1-10 (Not for 7) Recognise prime numbers and know tests for primes. Use product notation to write numbers as products of their prime factors. Use the concepts and vocabulary of highest common factor (HCF) and lowest common multiple (LCM).
2	Types of Number <ul style="list-style-type: none"> Know tests of divisibility for 1-10 (Not for 7) Recognise prime numbers and know tests for primes. Use product notation to write numbers as products of their prime factors. Use the concepts and vocabulary of highest common factor (HCF) and lowest common multiple (LCM).
3	Types of Number <ul style="list-style-type: none"> Know tests of divisibility for 1-10 (Not for 7) Recognise prime numbers and know tests for primes. Use product notation to write numbers as products of their prime factors. Use the concepts and vocabulary of highest common factor (HCF) and lowest common multiple (LCM).
4	Assessment Week <p>This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.</p>
5	Algebraic Expressions <ul style="list-style-type: none"> Understand the difference between expressions, equations, formula and term. Understand and simplify expressions with more than one variable using addition and subtraction. Simplify expressions involving multiplication and division using more than one variable. Write an expression from a problem. Use and apply the index laws for multiplication and division to algebra problems. Multiply out linear expressions with brackets. Expand and simplify expressions containing more than one single bracket. Factorise into one bracket.
6	Algebraic Expressions <ul style="list-style-type: none"> Expand and simplify expressions containing more than one single bracket. Factorise into one bracket.
7	Transformations <ul style="list-style-type: none"> Know the meaning of 'congruent', 'congruence', 'object', 'image'. Reflect shapes in a mirror line (including diagonals). Reflect a shape using a mirror line parallel to the axes. Reflect a shape when given the equation of the line of reflection (lines parallel to the axis only) Draw lines parallel to the axis from the equation ($x = n$ and $y = n$) Design a shape with given symmetrical properties. Rotate a shape by a given amount of turn. Describe a rotation fully. Finding the centre of rotation. Rotate shapes around a given centre. Describe a translation using vector notation. Translate a shape when given a vector. Understand vector notation. Understand that reflections, translations and rotations produce congruent images.
8	Transformations <ul style="list-style-type: none"> Draw lines parallel to the axis from the equation ($x = n$ and $y = n$) Design a shape with given symmetrical properties. Rotate a shape by a given amount of turn. Describe a rotation fully. Finding the centre of rotation. Rotate shapes around a given centre. Describe a translation using vector notation. Translate a shape when given a vector. Understand vector notation. Understand that reflections, translations and rotations produce congruent images.
9	Transformations <ul style="list-style-type: none"> Draw lines parallel to the axis from the equation ($x = n$ and $y = n$) Design a shape with given symmetrical properties. Rotate a shape by a given amount of turn. Describe a rotation fully. Finding the centre of rotation. Rotate shapes around a given centre. Describe a translation using vector notation. Translate a shape when given a vector. Understand vector notation. Understand that reflections, translations and rotations produce congruent images.
10	Probability <ul style="list-style-type: none"> Express a probability as a fraction, decimal or percentage. Understand the vocabulary of chance including impossible, unlikely, even, likely, certain. Understand probability must be between 0 and 1 and can be expressed as a fraction, decimal or percentage. Understand the probability scale and place events on it. Identify equally likely outcomes. Work out the theoretical probabilities for events with equally likely outcomes. List all the possible outcomes for an experiment (e.g. rolling a dice). Understand that if the probability of an event occurring is p then the probability of it not occurring is $1 - p$. Identify different mutually exclusive outcomes and know that the sum of these probabilities is 1. Know that probability is a way of measuring likelihood and that experimental probability Solve 1-step equations (the coefficient and the answer may be positive or negative and fractional).
11	Probability <ul style="list-style-type: none"> Work out the theoretical probabilities for events with equally likely outcomes. List all the possible outcomes for an experiment (e.g. rolling a dice). Understand that if the probability of an event occurring is p then the probability of it not occurring is $1 - p$. Identify different mutually exclusive outcomes and know that the sum of these probabilities is 1. Know that probability is a way of measuring likelihood and that experimental probability Solve 1-step equations (the coefficient and the answer may be positive or negative and fractional).
12	Equations <ul style="list-style-type: none"> Write an equation from a problem. Understand the meaning of and difference between a variable, coefficient, term, expression, formulae and equation. Multiply out linear expressions with brackets Write an expression from a problem. (express missing number problems algebraically) Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS) Form and solve equations from a problem Solve linear equations with brackets. Solve 2-step equations Solve fractional 3-step equations where the unknown once (one fraction only).
13	Equations <ul style="list-style-type: none"> Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS) Form and solve equations from a problem Solve linear equations with brackets. Solve 2-step equations Solve fractional 3-step equations where the unknown once (one fraction only).
14	Ratio <ul style="list-style-type: none"> Find fractions of an amount. Use knowledge of fractions to solve a sharing (or grouping) problem Use knowledge of multiples to solve a sharing (or grouping) problem Understand what a ratio means and its link to fraction notation. Write a ratio from a worded problem. Simplify ratios and understand equivalence between ratios. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Divide a given quantity into a two part (whole to part) ratio. Write a ratio to describe a situation and be able to give this in the form $1:n$.
15	Ratio <ul style="list-style-type: none"> Simplify ratios and understand equivalence between ratios. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Divide a given quantity into a two part (whole to part) ratio. Write a ratio to describe a situation and be able to give this in the form $1:n$.
16	Fractions, Decimals and Percentages <ul style="list-style-type: none"> Write a fraction in its lowest terms. Identify equivalent fractions. Order fractions on a number line. Convert fluently between improper fractions and mixed numbers. Add and subtract fractions with different denominators. Add and subtract with mixed numbers. Multiply and divide a fraction by a fraction. Multiply and divide an integer by a fraction. Multiply and divide a fraction by an integer. Multiply and divide with mixed numbers Convert between fractions, decimals and percentages with and without a calculator. Know standard fraction / decimal / percentage equivalences (e.g. $\frac{1}{2} = 0.5 = 50\%$, $\frac{1}{4} = 0.25 = 25\%$, $\frac{1}{10} = 0.1 = 10\%$, $\frac{1}{100} = 0.01 = 1\%$).
17	Fractions, Decimals and Percentages <ul style="list-style-type: none"> Multiply and divide a fraction by a fraction. Multiply and divide an integer by a fraction. Multiply and divide a fraction by an integer. Multiply and divide with mixed numbers Convert between fractions, decimals and percentages with and without a calculator. Know standard fraction / decimal / percentage equivalences (e.g. $\frac{1}{2} = 0.5 = 50\%$, $\frac{1}{4} = 0.25 = 25\%$, $\frac{1}{10} = 0.1 = 10\%$, $\frac{1}{100} = 0.01 = 1\%$).
18	Assessment Week <p>This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.</p>
19	Review Week <p>This will be spent reviewing any gaps from the topics studied up to this point.</p>

Year 8	
Theme	Teaching
20	Averages and Range <ul style="list-style-type: none"> Calculate the mean, median, mode and range of a set of simple numbers Calculate the mean, median, mode and range of any set of numbers. Understand the difference between averages and range. Compare two groups' averages and range in context. Know which average to choose and why. Solve missing number problems when given certain averages or the range. Calculate mean, median, mode and range from a bar chart.
21	Averages and Range <ul style="list-style-type: none"> Calculate the mean, median, mode and range of a set of simple numbers Calculate the mean, median, mode and range of any set of numbers. Understand the difference between averages and range. Compare two groups' averages and range in context. Know which average to choose and why. Solve missing number problems when given certain averages or the range. Calculate mean, median, mode and range from a bar chart.
22	Area and Perimeter <ul style="list-style-type: none"> Work out the perimeter of any shape (when given the measurements). Calculate the area of rectangles, triangles, parallelograms. Calculate the area of simple rectilinear compound shapes. Find a missing length when given the area or perimeter and other lengths in a square, rectangle or parallelogram. Convert to consistent units of measurement within the metric system where necessary to solve area and perimeter problems. Write an algebraic expression for the area/perimeter of a shape. Set up and solve equations linked to the area and perimeter of shapes. Find a missing length when given the area or perimeter and other lengths including with triangles. Solve problems linking to other contexts such as cost of a gardening project that draw on using area and perimeter. Find the area of a trapezium and learn the formula. Find a missing length when given the area or perimeter and other lengths including with trapezia.
23	Area and Perimeter <ul style="list-style-type: none"> Work out the perimeter of any shape (when given the measurements). Calculate the area of rectangles, triangles, parallelograms. Calculate the area of simple rectilinear compound shapes. Find a missing length when given the area or perimeter and other lengths in a square, rectangle or parallelogram. Convert to consistent units of measurement within the metric system where necessary to solve area and perimeter problems. Write an algebraic expression for the area/perimeter of a shape. Set up and solve equations linked to the area and perimeter of shapes. Find a missing length when given the area or perimeter and other lengths including with triangles. Solve problems linking to other contexts such as cost of a gardening project that draw on using area and perimeter. Find the area of a trapezium and learn the formula. Find a missing length when given the area or perimeter and other lengths including with trapezia.
24	Area and Perimeter <ul style="list-style-type: none"> Work out the perimeter of any shape (when given the measurements). Calculate the area of rectangles, triangles, parallelograms. Calculate the area of simple rectilinear compound shapes. Find a missing length when given the area or perimeter and other lengths in a square, rectangle or parallelogram. Convert to consistent units of measurement within the metric system where necessary to solve area and perimeter problems. Write an algebraic expression for the area/perimeter of a shape. Set up and solve equations linked to the area and perimeter of shapes. Find a missing length when given the area or perimeter and other lengths including with triangles. Solve problems linking to other contexts such as cost of a gardening project that draw on using area and perimeter. Find the area of a trapezium and learn the formula. Find a missing length when given the area or perimeter and other lengths including with trapezia.
25	Proportion <ul style="list-style-type: none"> Be able to recognise when two values are in proportion. Be able to find a multiplier to use in a proportion problem. Identify when a comparison problem can be solved using multiplication Identify when a comparison problem can be solved using division Identify when a comparison problem requires both division and multiplication Find the value of a single item in a comparison problem Solve proportion problems using the unitary method. Use exchange rates to convert between currencies with a calculator. Identify value for money by matching prices or quantities. Identify when proportional reasoning needs to be used in a real life problem/exam question.
26	Proportion <ul style="list-style-type: none"> Be able to recognise when two values are in proportion. Be able to find a multiplier to use in a proportion problem. Identify when a comparison problem can be solved using multiplication Identify when a comparison problem can be solved using division Identify when a comparison problem requires both division and multiplication Find the value of a single item in a comparison problem Solve proportion problems using the unitary method. Use exchange rates to convert between currencies with a calculator. Identify value for money by matching prices or quantities. Identify when proportional reasoning needs to be used in a real life problem/exam question.
27	Review Week <p>This will be spent reviewing any gaps from the topics studied up to this point.</p>
28	Assessment Week <p>This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.</p>
29	Angles, Polygons and Parallel lines <ul style="list-style-type: none"> Understand and use angle notation. Know the definitions of special triangles and quadrilaterals. Calculate missing angles around a point, in a triangle, in a quadrilateral and on a straight line. Solve composite angle problems involving all types of triangles and quadrilaterals. Identify vertically opposite angles. Know the meaning of 'regular' polygons. Identify exterior and interior angles of polygons. Be able to calculate each individual exterior and interior angle for any regular polygon. Be able to calculate the sum of interior angles of any polygon. Form and solve equations to find angles in 2D shapes.
30	Angles, Polygons and Parallel lines <ul style="list-style-type: none"> Understand and use angle notation. Know the definitions of special triangles and quadrilaterals. Calculate missing angles around a point, in a triangle, in a quadrilateral and on a straight line. Solve composite angle problems involving all types of triangles and quadrilaterals. Identify vertically opposite angles. Know the meaning of 'regular' polygons. Identify exterior and interior angles of polygons. Be able to calculate each individual exterior and interior angle for any regular polygon. Be able to calculate the sum of interior angles of any polygon. Form and solve equations to find angles in 2D shapes.
31	Angles, Polygons and Parallel lines <ul style="list-style-type: none"> Understand and use angle notation. Know the definitions of special triangles and quadrilaterals. Calculate missing angles around a point, in a triangle, in a quadrilateral and on a straight line. Solve composite angle problems involving all types of triangles and quadrilaterals. Identify vertically opposite angles. Know the meaning of 'regular' polygons. Identify exterior and interior angles of polygons. Be able to calculate each individual exterior and interior angle for any regular polygon. Be able to calculate the sum of interior angles of any polygon. Form and solve equations to find angles in 2D shapes.
32	Formulae <ul style="list-style-type: none"> Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS). Use symbols to represent variables in a formula. Create a one-step formula from given information. Create a two-step formula from given information. Interpret the information given in a written formula. Recognise a simple formula written in words. Substitute numbers into a two-step formula written in words. Rearrange a two step formula. Rearrange a one step formula. Substitute into a formula with negative non-integer values without a calculator.
33	Formulae <ul style="list-style-type: none"> Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS). Use symbols to represent variables in a formula. Create a one-step formula from given information. Create a two-step formula from given information. Interpret the information given in a written formula. Recognise a simple formula written in words. Substitute numbers into a two-step formula written in words. Rearrange a two step formula. Rearrange a one step formula. Substitute into a formula with negative non-integer values without a calculator.
34	Kinematics <ul style="list-style-type: none"> Convert fluently between metric units of length Convert fluently between metric units of mass Convert fluently between metric units of volume/capacity Convert between different units of currency when given conversion rates. Know the connection between speed, distance and time and use the speed = distance / time formula in simple 1-stage problems. Read/Solve problems using a conversion graph. Convert between different units of currency when given conversion rates. Convert between non-adjacent metric units: e.g. kilometres and centimetres. Convert to consistent units of measurement within the metric system where necessary to solve a problem. Identify when it is necessary to convert quantities in order to use a sensible unit of measure.
35	Kinematics <ul style="list-style-type: none"> Convert fluently between metric units of length Convert fluently between metric units of mass Convert fluently between metric units of volume/capacity Convert between different units of currency when given conversion rates. Know the connection between speed, distance and time and use the speed = distance / time formula in simple 1-stage problems. Read/Solve problems using a conversion graph. Convert between different units of currency when given conversion rates. Convert between non-adjacent metric units: e.g. kilometres and centimetres. Convert to consistent units of measurement within the metric system where necessary to solve a problem. Identify when it is necessary to convert quantities in order to use a sensible unit of measure.
36	Sequences <ul style="list-style-type: none"> Know and understand the language even, odd, prime, factor, multiple. Recognise the squares of numbers to 12×12 and the corresponding roots. Calculate cubes and cube roots with and without a calculator. Continue a non-numerical sequence. Recognise and continue non-linear sequences. Continue a sequence of numbers (including decimals, fractions and negatives). Begin to write expressions for position-to-term rule (nth term). Be given the position-to-term rule and write the terms of the sequence.
37	Sequences <ul style="list-style-type: none"> Know and understand the language even, odd, prime, factor, multiple. Recognise the squares of numbers to 12×12 and the corresponding roots. Calculate cubes and cube roots with and without a calculator. Continue a non-numerical sequence. Recognise and continue non-linear sequences. Continue a sequence of numbers (including decimals, fractions and negatives). Begin to write expressions for position-to-term rule (nth term). Be given the position-to-term rule and write the terms of the sequence.
38	Surface Area and Volume <ul style="list-style-type: none"> Recognise and sketch nets of 3D shapes. Draw plans and elevations for 3D objects Find the volume by counting cubes and stating units. (Know the units for volume and the abbreviations for these) Find a missing length in a volume question Use area to find the volume of a prism and vice versa Find the volume of rectangular, square, trapezia, triangular and parallelogram based prisms Find the surface area of a cuboid and a right angled triangular prism. Find the volume by counting cubes and stating units. (Know the units for volume and the abbreviations cm^3 and m^3) Use the area of shapes to find other dimensions
39	Surface Area and Volume <ul style="list-style-type: none"> Recognise and sketch nets of 3D shapes. Draw plans and elevations for 3D objects Find the volume by counting cubes and stating units. (Know the units for volume and the abbreviations for these) Find a missing length in a volume question Use area to find the volume of a prism and vice versa Find the volume of rectangular, square, trapezia, triangular and parallelogram based prisms Find the surface area of a cuboid and a right angled triangular prism. Find the volume by counting cubes and stating units. (Know the units for volume and the abbreviations cm^3 and m^3) Use the area of shapes to find other dimensions



Subject: Maths

Year 9	
Theme	Teaching
1	Types of Number <ul style="list-style-type: none"> To know the definitions of multiples, factors and prime numbers. To know the cube numbers from 1 - 6 and square numbers from 1 - 15. To know that square numbers can have both a positive and a negative root. To be able to multiply and divide by powers of 10 (inc 10, 100, 1000, 0.1, 0.01, 0.001) To understand decimal place value. To be able to convert large and small numbers to standard form and vice versa. To calculate with numbers in index form To know how to find LCM and HCF using Venn Diagrams. To know what HCF and LCM are and how to use them to solve problems. Select efficient techniques for numerical calculations. To be able to use a calculator.
2	Types of Number <ul style="list-style-type: none"> To know how to find LCM and HCF using Venn Diagrams. To know what HCF and LCM are and how to use them to solve problems. Select efficient techniques for numerical calculations. To be able to use a calculator.
3	Types of Number
4	Factorising <ul style="list-style-type: none"> To simplify an expression. To expand a bracket. To expand a bracket and simplify. To factorise a linear expression.
5	Scale Drawings, Nets, Plans and Elevations <ul style="list-style-type: none"> To understand what a scale factor is. To be able to use scale factors to solve problems. To be able to convert between miles and kilometers when given the conversion. To be able to draw & interpret plans and elevations. To be able to draw and identify NETS of shapes.
6	Scale Drawings, Nets, Plans and Elevations
7	Revision, Assessment and Review This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
8	Rounding <ul style="list-style-type: none"> To round a number to the nearest whole number. To round a number to a given decimal place. To round a number to a given number of significant places. Use approximation to 1 significant figure to approximate answers.
9	Solving Equations <ul style="list-style-type: none"> To know the difference between an expression, an identity and an equation. To write an expression and an equation. To expand two brackets and simplify, eg $2(x+4) - 3(x+2)$. To solve one and two step linear equations using 1 variable. To solve an equation with unknowns on both sides. To apply solving linear equations to other aspects of maths.
10	Solving Equations
11	Frequency Diagrams <ul style="list-style-type: none"> To be able to draw and interpret two way tables To be able to complete and interpret frequency trees To be able to draw dual and composite bar charts To be able to draw and interpret line graphs. To be able to draw and interpret Venn Diagrams. To be able to compare and contrast the same type of and different types of frequency diagram To interpret specific information from a frequency diagram including mode, total frequency, highest and lowest value etc
12	Frequency Diagrams
13	Averages <ul style="list-style-type: none"> To find the mean, median and mode from a list of data. To know when to use each average and why. To find the mode and median from a frequency table. To find the mean from a frequency table. To find the mean, median and mode from a bar chart To find the interval that contains the modal group from grouped data. To find the interval that contains the median from grouped data. To find the estimated mean from grouped frequency data.
14	Averages
15	Review Week This will be spent catching reviewing any gaps from the topics studied up to this point.
16	Fractions <ul style="list-style-type: none"> To know and find equivalent fractions. To be able to simplify a fraction. To convert between mixed numbers and improper fractions. To multiply fractions. To dividing fractions. To finding a fraction of an amount. To add and subtract proper, improper fractions and mixed numbers Use a scientific calculator to calculate with fractions, both positive and negative
17	Fractions
18	Algebraic Expressions and Problem Solving <ul style="list-style-type: none"> To be able to simplify expressions involving sums, products and powers To be able to substitute values into expressions and equations To be able to rearrange equations to change the subject of a formula To be able to form an expression To be able to form an equation to solve a problem. To recognise and interpret index notation To know and use the index laws for multiplication and division
19	Algebraic Expressions and Problem Solving

Year 9	
Theme	Teaching
20	Algebraic Expressions and Problem Solving <ul style="list-style-type: none"> To be able to form an equation to solve a problem. To recognise and interpret index notation To know and use the index laws for multiplication and division
21	Revision, Assessment and Review This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
22	Constructions and Congruence <ul style="list-style-type: none"> To be able to construct both angle, line and point to line bisections. To be able to apply bisections to problems. To be able to construct a Locus of a given area. To be able to construct congruent triangles using ASA, SAS, SSS & RHS. To be able to prove two triangles are congruent using the rules ASA, SAS, SSS or RHS.
23	Constructions and Congruence
24	Percentages <ul style="list-style-type: none"> To be able to understand fractions or percentages as operators. To be able to calculate a fraction or percentage of an amount. To be able to write one amount as a fraction or percentage of another. To be able to calculate a percentage change To be able to calculate a percentage increase or decrease. To be able to convert between fractions, decimals and percentages and understand their equivalence.
25	Percentages
26	Inequalities <ul style="list-style-type: none"> To know and understand the inequality symbols $< \leq > \geq =$ To find integer solutions to an inequality To solve a linear inequality. To represent inequalities on a number line.
27	Inequalities
28	Circles <ul style="list-style-type: none"> To know and recognise the parts of a circle. To know and apply the formulae for area of a circle. To know and apply the formulae for circumference of a circle. To work backwards in a circle problem to find the radius or the diameter. To solve a circle problem, leaving answers in terms of π.
29	Circles
30	Pie Charts and Scatter Graphs <ul style="list-style-type: none"> Understand that pie charts are used to show proportions Use a template to construct a pie chart by scaling frequencies Construct pie charts when the total frequency is not a factor of 360 Interpret data shown on a pie chart. Plot a scatter diagram Understand the meaning of 'correlation' Identify positive, negative and no correlation. Interpret a scatter diagram using understanding of correlation Construct a line of best fit on a scatter diagram Use a line of best fit to estimate values
31	Pie Charts and Scatter Graphs
32	Review Week This will be spent catching reviewing any gaps from the topics studied up to this point.
33	Linear Graphs <ul style="list-style-type: none"> To be able to work with co-ordinates in all four quadrants. To be able to draw the lines, $y=x$, $y=-x$, $y=n$ and $x=n$ and understand which lines are parallel to the axes. To be able to draw a line in the format $y=mx + c$. To be able to find the gradient of a straight line from the equation and graph. To deduce the equation of a straight line and write it in the form $y=mx+c$. To use the linear equation to identify parallel lines.
34	Linear Graphs
35	Revision, Assessment and Review This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
36	Volume <ul style="list-style-type: none"> Identifying 3D shapes from both picture and description. Find the Volume of a prism by counting squares and by calculation. Find the Volume of a cylinder. Solve problems involving Volume.
37	Volume
38	Probability <ul style="list-style-type: none"> Write probabilities in words, fractions, decimals and percentages and place these on a scale from 0 to 1. Compare the probabilities of events by comparing sizes of fractions, decimals and percentages. Systematically list all outcomes for single and combined events. Use and draw sample space diagrams. Use theoretical models to include outcomes using dice, spinners and coins.
39	Probability