



## Subject: Maths

Year 7	
Theme	Teaching
1	Calculations
2	Calculations
3	Calculations
4	Calculations
5	Time
6	Time
7	2D shape
8	2D shape
9	Number Sense
10	Number Sense
11	Number Sense
12	Algebraic Notation
13	Algebraic Notation
14	Fractions
15	Fractions
16	Review Week
17	Assessment Week
18	Formulae
19	Formulae

Year 7	
Theme	Teaching
20	Rounding and Estimating
21	Rounding and Estimating
22	Measure
23	Measure
24	Algebraic Notation
25	Algebraic Notation
26	Percentages
27	Percentages
28	Percentages
29	Assessment Week
30	Review Week
31	Coordinates
32	Coordinates
33	Area and Perimeter
34	Area and Perimeter
35	Area and Perimeter
36	Catch up/Review/problem solving
37	Catch up/Review/problem solving
38	3D Shape
39	3D Shape



## Subject: Maths

Year 8	
Theme	Teaching
1 Types of Number	<ul style="list-style-type: none"> <li>Round numbers and measures to an appropriate degree of accuracy and understand this statement.</li> <li>Round to any given number of significant figures.</li> <li>Multiply and divide numbers by 0.1, 0.01, 0.001, 10, 100 and a 1000.</li> </ul>
2 Types of Number	<ul style="list-style-type: none"> <li>Calculate square and square roots (up to 15 squared without a calculator) with and without a calculator.</li> <li>Estimate Square Roots</li> <li>Calculate cubes and cube roots (1-6 and 10 cubed without a calculator) with and without a calculator.</li> <li>Know the index laws for multiplication and division of powers with the same base (numbers only no algebra).</li> <li>Know laws of divisibility for 1-10 (Not for 7).</li> <li>Recognise prime numbers and know tests for primes.</li> <li>Use product notation to write numbers as products of their prime factors.</li> <li>Use the concepts and vocabulary of highest common factor (HCF) and lowest common multiple (LCM).</li> </ul>
3 Types of Number	
4 Assessment Week	This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
5 Algebraic Expressions	<ul style="list-style-type: none"> <li>Use and apply the index laws for multiplication and division to algebra problems.</li> <li>Use and apply the index laws for raising a power to a power to algebra problems.</li> <li>Understand and simplify expressions with more than one variable.</li> <li>Simplify algebraic expressions by cancelling down.</li> <li>Multiply out linear expressions with brackets.</li> <li>Expand and simplify expressions containing more than one single bracket.</li> <li>Factorise a linear expression.</li> </ul>
6 Algebraic Expressions	
7 Transformations	<ul style="list-style-type: none"> <li>Know the meaning of 'congruent', 'congruence', 'object', 'image'.</li> <li>Reflect shapes in a mirror line (including diagonals).</li> <li>Reflect a shape when given the equation of the line of reflection (lines parallel to the axis only)</li> <li>Draw lines parallel to the axis from the equation (<math>x = n</math> and <math>y = n</math>)</li> <li>Reflect shapes in the in lines such as <math>x = 2</math>, <math>y = 4</math></li> <li>Describe the equation of the mirror line (<math>y = a</math> number, <math>x = a</math> number and <math>y = x</math>)</li> <li>Design a shape with given symmetrical properties.</li> <li>Describe a rotation fully.</li> <li>Finding the centre of rotation.</li> <li>Rotate shapes around a given centre.</li> <li>Describe a translation using vector notation.</li> <li>Translate a shape when given a vector.</li> <li>Understand vector notation.</li> <li>Understand that reflections, translations and rotations produce congruent images.</li> <li>Combine reflections, rotations and translations.</li> </ul>
8 Transformations	
9 Transformations	
10 Probability	<ul style="list-style-type: none"> <li>Understand the vocabulary of chance including impossible, unlikely, even, likely, certain.</li> <li>Express a probability as a fraction, decimal or percentage.</li> <li>Understand probability must be between 0 and 1 and can be expressed as a fraction, decimal or percentage.</li> <li>Understand the probability scale and place events on it.</li> <li>Identify equally likely outcomes.</li> <li>Work out the theoretical probabilities for events with equally likely outcomes.</li> <li>Understand that the probability of an event occurring is <math>p</math> then the probability of it not occurring is <math>1 - p</math>.</li> <li>Identify different mutually exclusive outcomes and know that the sum of these probabilities is 1.</li> <li>Know that probability is a way of measuring likelihood and that experimental probability will not always match theoretical probability.</li> <li>List all the possible outcomes for an experiment (e.g. rolling a dice).</li> <li>List all the outcomes for two successive events in a systematic way and derive probabilities from this.</li> <li>Understand that increasing the sample size generally leads to better estimates of probability.</li> <li>Use a single probability to find an estimate of frequency.</li> </ul>
11 Probability	
12 Equations	<ul style="list-style-type: none"> <li>Solve 1-step equations (the coefficient and the answer may be positive or negative and fractional).</li> <li>Solve 2-step equations</li> <li>Solve linear equations with brackets.</li> <li>Solve fractional 3-step equations where the unknown once (one fraction only).</li> <li>Form and solve equations from a problem</li> <li>Solve equations with the unknowns on both sides such as <math>3x - 4 = 5 + x</math></li> </ul>
13 Equations	
14 Ratio	<ul style="list-style-type: none"> <li>Use knowledge of fractions to solve a sharing (or grouping) problem</li> <li>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> <li>Use knowledge of multiples to solve a sharing (or grouping) problem</li> <li>Understand what a ratio means and its link to fraction notation.</li> <li>Simplify ratios and understand equivalence between ratios.</li> <li>Write a ratio from a worded problem.</li> <li>Write a ratio to describe a situation and be able to give this in the form <math>1:n</math>.</li> <li>Divide a given quantity into a two part (whole to part) ratio.</li> <li>Use ratio to find a quantity when other quantities are known (part to part).</li> </ul>
15 Ratio	
16 Fractions, Decimals and Percentages	<ul style="list-style-type: none"> <li>Multiply and divide with mixed numbers</li> <li>Multiply and divide a fraction by a fraction.</li> <li>Multiply and divide an integer by a fraction.</li> <li>Multiply fractions such as <math>\frac{1}{2} \times \frac{1}{3}</math> relating them to 'a half of a third'.</li> <li>Add and subtract with mixed numbers.</li> <li>Convert between fractions, decimals and percentages with and without a calculator.</li> <li>Understand mental arithmetic methods for multiplying and dividing by terminating decimal values between -1 and 1.</li> <li>Linking this to fractions</li> <li>Write one quantity as a fraction of another including when the fraction is greater and less than 1.</li> <li>Express one quantity as a percentage of another.</li> <li>Express a change in quantity as a percentage change.</li> <li>Find any percentage of a given quantity without a calculator.</li> <li>Find any percentage of a given quantity using a calculator using the multiplier method.</li> <li>Solve real-life problems using percentages.</li> <li>Increase or decrease a quantity by a percentage using a calculator using the multiplier method.</li> <li>Increase or decrease a quantity by a percentage without a calculator.</li> </ul>
17 Fractions, Decimals and Percentages	
18 Assessment Week	This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
19 Review Week	This will be spent reviewing any gaps from the topics studied up to this point.

Year 8	
Theme	Teaching
20 Averages and Range	<ul style="list-style-type: none"> <li>Find the mean, median, mode and range of any set of numbers.</li> <li>Understand the difference between averages and range.</li> <li>Compare two groups' averages and ranges in context.</li> <li>Know which average to choose and why.</li> <li>Understand how changing the data will change the averages/range.</li> <li>Solve missing number problems when given certain averages or the range.</li> <li>Calculate mean, median, mode and range from a bar chart.</li> <li>Calculate the mean, median, mode and range from a frequency table</li> </ul>
21 Averages and Range	
22 Area and Perimeter	<ul style="list-style-type: none"> <li>Work out the perimeter of any shape (when given the measurements).</li> <li>Calculate the area of rectangles, triangles, parallelograms.</li> <li>Calculate the area of simple rectilinear compound shapes.</li> <li>Find a missing length when given the area or perimeter and other lengths in a square, rectangle or parallelogram.</li> <li>Convert to consistent units of measurement within the metric system where necessary to solve area and perimeter problems.</li> <li>Write an algebraic expression for the area/perimeter of a shape.</li> <li>Set up and solve equations linked to the area and perimeter of shapes.</li> <li>Find a missing length when given the area or perimeter and other lengths including with triangles.</li> <li>Solve problems linking to other contexts such as cost of a gardening project that draw on using area and perimeter.</li> <li>Find the area of a trapezium and learn the formula.</li> <li>Find a missing length when given the area or perimeter and other lengths including with trapezia.</li> <li>Know and label the parts of a circle (only area, circumference, diameter and radius).</li> </ul>
23 Area and Perimeter	
24 Area and Perimeter	
25 Proportion	<ul style="list-style-type: none"> <li>Be able to recognise when two values are in proportion.</li> <li>Be able to find a multiplier to use in a proportion problem.</li> <li>Solve proportion problems using the unitary method.</li> <li>Identify value for money by matching prices or quantities.</li> <li>Use exchange rates to convert between currencies with a calculator.</li> <li>Use comparisons to be able to identify best buys for multi-step problems. Including those where different combinations of deals can be used.</li> <li>Identify when proportional reasoning needs to be used in a real life problem/exam question.</li> </ul>
26 Proportion	
27 Review Week	This will be spent reviewing any gaps from the topics studied up to this point.
28 Assessment Week	This includes a revision lesson, 2 lessons for the assessment and a lesson to review the assessment.
29 Angles, Polygons and Parallel lines	<ul style="list-style-type: none"> <li>Know the definitions of special triangles/quadrilaterals</li> <li>Calculate missing angles at a point, in a triangle, in a quadrilateral and on a straight line.</li> <li>Understand angle notation.</li> <li>Solve composite angle problems involving all types of triangles and quadrilaterals.</li> <li>Identify exterior and interior angles of polygons and be able to calculate these for any regular polygon.</li> <li>Be able to calculate the sum of interior angles of any polygon.</li> <li>Form and solve equations to find angles in 2d shapes.</li> <li>Identify vertically opposite angles.</li> <li>Identify alternate, corresponding and co-interior angles.</li> <li>Calculate missing angles in parallel lines problems and explain reasoning.</li> </ul>
30 Angles, Polygons and Parallel lines	
31 Angles, Polygons and Parallel lines	
32 Formulae	<ul style="list-style-type: none"> <li>Use the correct order of operations to interpret numeric calculations and algebraic expressions. (BIDMAS)</li> <li>Create a one/two-step formula from given information</li> <li>Substitute any number into an expression.</li> <li>Substitute negative and fractional numbers into an expression.</li> <li>Substitute numbers into a two-step formula written in words.</li> <li>Interpret the information that results from substituting into a formula.</li> <li>Change the subject of a formula when one step is required.</li> <li>Change the subject of a formula when two steps are required.</li> <li>Substitute into common scientific formulae - speed, density and pressure with the values and formulae given.</li> </ul>
33 Formulae	
34 Kinematics	<ul style="list-style-type: none"> <li>Convert between non-adjacent metric units; e.g. kilometres and centimetres.</li> <li>Convert to consistent units of measurement within the metric system where necessary to solve a problem.</li> <li>Identify when it is necessary to convert quantities in order to use a sensible unit of measure.</li> <li>Convert between different units of currency when given conversion rates.</li> <li>Read/Solve problems using a conversion graph.</li> <li>Know the connection between speed, distance and time and use the speed = distance / time formula in simple 1-stage problems.</li> <li>Know the connection between speed, distance and time and use the speed = distance / time formula for multi-stage problems.</li> </ul>
35 Kinematics	
36 Sequences	<ul style="list-style-type: none"> <li>Recognise the squares of numbers to <math>12 \times 12</math> and the corresponding roots.</li> <li>Calculate cubes and cube roots with and without a calculator.</li> <li>Recognise and continue non- numerical and non-linear sequences.</li> <li>Continue a sequence of numbers (including decimals, fractions and negatives).</li> <li>Begin to write expressions for position-to-term rule (nth term).</li> <li>Be given the position-to-term rule and write the terms of the sequence.</li> <li>Be given the position-to-term rule for non-linear sequences and write the terms of the sequence.</li> </ul>
37 Sequences	
38 Surface Area and Volume	<ul style="list-style-type: none"> <li>Understand <math>\pi</math>, label radius and diameter on a diagram.</li> <li>Find the volume of a cuboid.</li> <li>Find the missing value in a volume question</li> <li>Use area to find the volume of a prism and vice versa</li> <li>Find the area of a trapezium and know the formula</li> <li>Find the surface area of a prism.</li> <li>Know the formulae for circumference and area of a circle.</li> <li>Find the volume of a cylinder</li> <li>Use the area of a circle to find the surface area of a cylinder</li> <li>Solve algebraic problems including Volume/Surface Area</li> </ul>
39 Surface Area and Volume	



## Subject: Maths

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

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