

**This term in Mathematics we will be learning about:**

	<b>Mastery</b>	<b>Working beyond National Standards</b>	<b>Working at national standards</b>	<b>Working below national standards</b>
<b>K N O W L E D G E</b>	<p>I know basic index laws.</p> <p>I know when to use each of the different averages.</p> <p>I know the difference between theoretical and experimental probability.</p> <p>I know how to convert between improper fractions and mixed numbers.</p>	<p>I know the formula for volume of a cuboid and triangular prism.</p> <p>I know the nets of standard 3D shapes.</p> <p>I know what is meant by mutually exclusive.</p> <p>I know how to substitute values into expressions.</p>	<p>I know the difference between volume and surface area.</p> <p>I know the order of operations (BIDMAS).</p> <p>I know the formulae for areas of basic shapes.</p>	<p>I know that counting squares inside a shape finds the area.</p> <p>I know that letters can be used to represent different values.</p> <p>I know a written method for multiplying and dividing.</p> <p>I know the language associated with probability.</p>
<b>S K I L L S &amp; A P P L I C A T I O N</b>	<p>I know how to estimate calculations and know when to use estimation to check my answer.</p> <p>I know how to convert between metric units for length, area &amp; volume.</p> <p>I know when to use index laws to simplify expressions with multiplication &amp; division.</p> <p>I know how to compare sets of data using averages, including the upper &amp; lower quartiles.</p> <p>I can calculate relative frequencies and use to make estimates.</p> <p>I can perform all four operation with fractions, including mixed numbers.</p> <p>I recognise the different types of sequences (Fibonacci, geometric) and can continue them.</p>	<p>I can round to significant figures and can calculate with decimals.</p> <p>I can find the volume and surface area of cuboids &amp; triangular prisms.</p> <p>I know how to form &amp; solve equations, including with brackets.</p> <p>I can find the mean, modal class &amp; range from grouped frequency tables.</p> <p>I can identify mutually exclusive events and find their probabilities.</p> <p>I know how to multiply and divide fractions.</p> <p>I can generate linear and quadratic sequences.</p>	<p>I can work with negative numbers and know the order of operations.</p> <p>I can find the area of compound shapes made from rectangles &amp; triangles.</p> <p>I can simplify harder expressions.</p> <p>I can substitute positive &amp; negative values into expressions and know how to solve one two equations.</p> <p>I can find the mean, mode &amp; range from frequency tables.</p> <p>I know how to calculate probabilities of equally likely outcomes.</p> <p>I know how to add and subtract fractions.</p> <p>I can find the nth term of a linear sequence.</p>	<p>I know how to round to 10, 100 &amp; 1000 and can order decimals.</p> <p>I know &amp; can use the formula for area of a rectangle and area of a triangle.</p> <p>I can collect basic like terms.</p> <p>I can substitute positive values into expressions and know how to solve one step equations.</p> <p>I know how to find the mean, median, mode &amp; range for a set of data.</p> <p>I know how to use the probability scale with words and numbers.</p> <p>I can find equivalent fractions.</p> <p>I can continue practical using a term-to-term rule and sequences in practical contexts.</p>

This term in Mathematics we will be learning about:				
	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
<b>K N O W L E D G E</b>	<p>I know what is meant by vertex and intercepts.</p> <p>I know the laws of indices.</p>	<p>I know the graphs of <math>y=\pm x</math>.</p>	<p>I recognise graphs parallel to the axes and know their equations.</p> <p>I know the vocabulary associated with angles in parallel lines.</p>	<p>I know how to add and subtract decimals.</p> <p>I know the sum of angles on a line and around a point.</p>
<b>S K I L L S &amp; A P P L I C A T I O N</b>	<p>I can find the nth term of simple quadratic sequences.</p> <p>I know how to perform all four operations with numbers in standard form.</p> <p>I know when to use each different type of construction to solve loci problems.</p> <p>I know how to find the arc length and area of a sector.</p> <p>I can plot quadratic graphs and know the key features.</p> <p>I know how to draw and compare frequency polygons.</p>	<p>I can generate quadratic sequences.</p> <p>I can write and order numbers in standard form.</p> <p>I know how to carry out all the different constructions, including constructing triangles.</p> <p>I can calculate the volume and surface area of prisms, including cylinders.</p> <p>I can sketch graphs of linear functions given the equation.</p> <p>I know how to find the mean, median, mode &amp; range from a frequency table, including grouped data.</p>	<p>I can recognise and extend quadratic and geometric sequences.</p> <p>I can multiply and divide decimals.</p> <p>I can solve problems on parallel lines and provide reasons.</p> <p>I can find the area and perimeter of compound shapes made from rectangles &amp; triangles.</p> <p>I can identify the gradient and y-intercept from a straight line graph.</p> <p>I know how to find the mean, mode &amp; range from a frequency table.</p>	<p>I can find the nth term of an arithmetic sequence.</p> <p>I know how to round to a number of decimal places and can order decimals.</p> <p>I can find missing angles on parallel lines.</p> <p>I can find the area of 2D shapes (excluding circles).</p> <p>I know how to use a table of values to plot a linear graph.</p> <p>I know how to find the mean, median, mode and range for a list of data.</p>

This term in Mathematics we will be learning about:				
	Mastery	Working beyond National Standards	Working at national standards	Working below national standards
<b>K N O W L E D G E</b>	I know all the circle theorems and the associated vocabulary.	I know the difference between an expression and an equation. I know the formula for arc length and sector area.	I know the different formulae for area of 2D shapes. I know the different parts of a circle. I know the names of the four types of transformations.	I know factors of numbers up to 100. I know what relative frequency is. I know what is meant by translate, rotate and reflect. I can identify congruent and similar shapes. I can substitute values into expressions. I know common angle facts.
<b>S K I L L S &amp; A P P L I C A T I O N</b>	I can factorise quadratics where $a \neq 1$ . I can find probabilities from tree diagrams, without replacement. I know when to use the arc length and area of a sector formulae to solve problems. I can make links between scale factors for lengths, areas and volumes. I recognise key features of common graph types. I know when to use the different circle theorems to solve complex problems and can justify the solution with reasons. I know how to work out whether a given term is in a quadratic sequence.	I can solve quadratics by factorising where $a=1$ . I can find probabilities using tree diagrams. I can work out the length of arc and sector area. I know how to perform and describe the four transformations. I can find missing lengths in similar shapes. I can identify and plot cubic and reciprocal graphs. I know how to solve simple problems involving circle theorems and justify reasons. I know how to find the $n$ th term of a quadratic sequence.	I can expand and factorise up to two brackets/quadratic expressions. I can find probabilities using sample space diagrams. I know how to find the area of compound shapes including parts of circles. I can enlarge using positive/negative/fractional scale factors from a point. I can identify and plot quadratic graphs. I know how to calculate interior and exterior angles in polygons. I know how to continue and generate quadratic sequences.	I can expand and factorise expressions with one bracket and solve linear equations. I can complete sample space diagrams and list outcomes of more than one event. I know how to find the area and circumference of a circle. (Sets 4-5, Spring term) I can multiply and divide decimals. I can enlarge a shape using positive scale factors. I can identify and plot linear graphs. I know how to calculate angles in parallel lines and to find bearings. I know how to generate and find the general rule for a linear sequence.

AUTUMN TERM YEAR 9

This term in Mathematics we will be learning about

	Grade 7-9	Grade 6	Grade 4-5
KNOWLEDGE		<p>I know the different circle theorems.</p> <p>I know the commutative property of multiplication.</p> <p>I know when a fraction is equivalent to a recurring or terminating decimal.</p>	<p>I know what is meant by HCF and LCM.</p> <p>I know the vocabulary for angles in parallel lines.</p> <p>I know the rules for divisibility.</p> <p>I know the vocabulary associated with circles.</p> <p>I know the nets of standard 3D shapes.</p> <p>I know common conversions for fractions, decimals and percentages.</p>
SKILLS & APPLICATION	<p>I can write expressions in completed square form.</p> <p>I know how to factorise harder quadratics where <math>a \neq 1</math>.</p> <p>I can solve complex circle theorem problems and provide reasons to support my answer.</p> <p>I can simplify algebraic fractions and solve equations involving algebraic equations.</p>	<p>I know how to expand triple brackets.</p> <p>I can write recurring decimals as fractions.</p> <p>I can recognise when to use the different circle theorems.</p>	<p>I know how to use index laws for multiplication &amp; division.</p> <p>I can write numbers and perform all four operations with numbers in standard form. I know how to find the HCF and LCM of two numbers using prime factors.</p> <p>I know when to use HCF or LCM to solve worded problems.</p> <p>I know how to find the area and perimeter of 2D shapes, including arcs and sectors.</p> <p>I can find the volume and surface area of prisms.</p> <p>I know how to calculate averages from frequency tables.</p> <p>I can expand and factorise quadratics where <math>a = 1</math>.</p> <p>I know how to perform all four operations with fractions, including mixed numbers.</p> <p>I know how to solve angle problems involving parallel lines.</p> <p>I can find interior &amp; exterior angles of polygons.</p> <p>I can solve linear equations, including unknowns on both sides.</p>

AUTUMN TERM YEAR 10H

**This term in Mathematics we will be learning about**

	Grade 4-5	Grade 3	Grade 1-2
KNOWLEDGE	<p>I know what is meant by HCF and LCM.</p> <p>I know the vocabulary for angles in parallel lines.</p> <p>I know the diagrammatic notation for parallel sides, equal lengths and labelling of sides/vertices.</p>	<p>I know the different formulae for area of 2D shapes (excluding a circle).</p> <p>I know what is meant by perpendicular.</p>	<p>I know what is meant by factors, multiples, prime numbers, square numbers and cube numbers.</p> <p>I know the properties of different triangles &amp; quadrilaterals.</p>
SKILLS & APPLICATION	<p>I know how to find the HCF and LCM of two numbers using prime factors.</p> <p>I know when to use HCF or LCM to solve worded problems.</p> <p>I can find the volume &amp; surface area of triangular prisms.</p> <p>I know how to convert between area measures.</p> <p>I know how to find different averages from frequency tables, including grouped data.</p> <p>I know how to expand and factorise quadratics.</p> <p>I can solve quadratic equations by factorising.</p> <p>I can solve equations and inequalities, including with unknowns on both sides.</p> <p>I know how to solve angle problems involving parallel lines.</p> <p>I can find interior &amp; exterior angles of polygons.</p> <p>I know when to use a line of best fit to estimate data.</p> <p>I know when to use different constructions to solve loci problems.</p> <p>I know how to measure &amp; solve bearing problems.</p>	<p>I can find the prime factor decomposition of a numbers.</p> <p>I can find the area of compound shapes.</p> <p>I can find the volume and surface area of cubes &amp; cuboids.</p> <p>I know how to convert between different metric units.</p> <p>I can expand &amp; factorise single brackets.</p> <p>I know how to carry out all four operations with fractions, including with mixed numbers.</p> <p>I can solve equations including with brackets.</p> <p>I can plot scatter graphs.</p> <p>I know how to draw and interpret scale drawings.</p> <p>I can carry out different constructions with a compass.</p>	<p>I can find factors &amp; multiples of a number.</p> <p>I know how to find the area of triangles and different quadrilaterals.</p> <p>I know how to find the mean, median, mode &amp; range for a list of data.</p> <p>I can draw &amp; interpret frequency polygons.</p> <p>I know how to write &amp; simplify expressions.</p> <p>I can convert between fractions, decimals and percentages.</p> <p>I can solve one step equations.</p> <p>I know the properties of angles on a straight line, around a point, in triangles &amp; quadrilaterals.</p> <p>I can draw and interpret bar charts, pie charts and stem &amp; leaf diagrams.</p> <p>I can measure and draw angles.</p>

AUTUMN TERM YEAR 10F

**This term in Mathematics we will be learning about**

	Grade 7-9	Grade 6	Grade 4-5
KNOWLEDGE	<p>I know the quadratic formula.</p> <p>I know the formula for frequency density.</p> <p>I know the sine and cosine rules.</p> <p>I know what is meant by rationalise.</p>	<p>I know what a reciprocal is.</p> <p>I know unit conversions for length, area and volume.</p>	<p>I know Pythagoras' Theorem.</p> <p>I know what is meant by SOH CAH TOA.</p> <p>I know exact trigonometric values.</p> <p>I know what is meant by rotate, reflect, translate and enlarge.</p> <p>I know square and cube numbers (up to <math>10^3</math>)</p> <p>I know the graphs of <math>y=a</math>, <math>x=a</math> and <math>y=\pm x</math>.</p>
SKILLS & APPLICATION	<p>I know how to simplify surds.</p> <p>I know how to rationalise denominators involving surds.</p> <p>I can solve 3D problems using Pythagoras' theorem and trigonometry.</p> <p>I can use the Sine and Cosine rules to solve problems in non right angled triangles.</p> <p>I know how to find the nth term of a quadratic sequence.</p> <p>I can factorise and solve harder quadratic equations where <math>a \neq 1</math>.</p> <p>I know when to use the quadratic formula to solve equations.</p> <p>I can solve equations involving algebraic fractions.</p> <p>I know how to draw and interpret histograms.</p> <p>I know how to use similar shapes to help work out the volume of frustums.</p>	<p>I can simplify fractional and negative indices.</p> <p>I can enlarge a shape by a negative scale factor.</p> <p>I know how to use the link between scale factors to solve area &amp; volume problems in similar shapes.</p>	<p>I know how to use index laws for multiplication &amp; division and a power to a power.</p> <p>I know when to use trigonometry and Pythagoras to solve problems in right angled triangles.</p> <p>I can find the nth term of linear sequences.</p> <p>I can perform and describe all four transformations.</p> <p>I can work with similar shapes and similar triangles to find missing lengths.</p> <p>I can factorise &amp; solve quadratic equations where <math>a = 1</math>.</p> <p>I know how to work out the volume and surface area of prisms, spheres and cones.</p>

**AUTUMN TERM YEAR 11H**

**This term in Mathematics we will be learning about**

	Grade 4-5	Grade 3	Grade 1-2
KNOWLEDGE	<p>I know what is meant by similar shapes.</p> <p>I know the relationship between speed, distance and time.</p> <p>I know the relationship between density, mass and volume.</p>	<p>I know what significant figures are.</p>	<p>I know what is meant by congruency.</p> <p>I know angle facts for triangles and quadrilaterals.</p>
SKILLS & APPLICATION	<p>I know how to use index laws for multiplication &amp; division and negative indices.</p> <p>I can write numbers in standard form and perform all four operations with numbers in standard form.</p> <p>I can solve fractional equations and equations with unknowns on both sides.</p> <p>I know how to form &amp; solve linear simultaneous equations.</p> <p>I can work with similar shapes and similar triangles to find missing lengths.</p> <p>I know how to solve problems involving speed or density.</p> <p>I can draw and interpret distance time graphs.</p> <p>I can solve simple geometric problems using vectors.</p>	<p>I know when to use rounding to estimate the value of calculations.</p> <p>I can identify upper and lower bounds and write error intervals.</p> <p>I can solve equations, including with brackets.</p>	<p>I can solve one step equations.</p> <p>I know how to identify congruent shapes.</p> <p>I can solve problems involving time and timetables.</p>

**AUTUMN TERM YEAR 11F**