

**Key Stage:** 3 Year 7 Set 2 and 3, Year 8 Set 3 and 4

**Subject:** Mathematics

**Aims of the subject:**

We aim to develop the full potential of every pupil in Mathematics. We aim to ensure that every pupil experiences success and enjoyment in the subject whether it be equipping them with sufficient Mathematics skills for their day to day life or providing them with a firm foundation for those wishing to pursue Mathematics beyond GCSE. In addition, we hope that we can open our young people's eyes to the creative, imaginative and inspiring world of Mathematics.

The Mathematics scheme of learning is divided into units of study consisting of interlinking skills and topics. For each unit of study, pupils will complete a 'common homework' and a multiple choice quiz. Students will sit an end of term assessment three times a year. The 'common homework' will be completed by all the students following this scheme of learning and may take the form of a written task or an online task using vlemathswatch or ActiveLearn. In addition to the common homework, pupils will receive homework set by their class teacher. The mini assessment will provide an opportunity for pupils to demonstrate their ability to recall basic information or perform simple procedures, apply their mathematical understanding to problem solving and contextual problems and to recall information studied in previous units of work.

### Year 7

		<b>What will I learn?</b>	<b>What will I do?</b>
Term 1	Unit 1	<ul style="list-style-type: none"><li>• add, subtract, multiply and divide negative numbers</li><li>• substitute negative numbers into an expression or formula</li><li>• simplify algebraic expressions (incl. collecting like terms)</li><li>• plot a coordinate</li><li>• draw a linear graph</li><li>• solve simple one step and two step equations</li></ul>	Multiple Choice Quiz Common homework



	Unit 2	<ul style="list-style-type: none"> <li>• find equivalent fractions</li> <li>• simplify fractions</li> <li>• put a list of positive/negative fractions in size order</li> <li>• add and subtract fractions</li> <li>• multiply fractions</li> <li>• divide fractions</li> <li>• write a number as fraction of another number</li> <li>• calculate a fraction of an amount</li> </ul>	Multiple Choice Quiz Common homework
Term 2	Unit 3	<ul style="list-style-type: none"> <li>• put a list of positive/negative decimals in order of size</li> <li>• add and subtract whole numbers and decimals</li> <li>• multiply whole numbers and decimals</li> <li>• divide whole numbers and decimals</li> <li>• apply your knowledge of calculating with integers and decimals to problems involving a real life problem</li> </ul>	Multiple Choice Quiz Common homework
	Unit 4	<ul style="list-style-type: none"> <li>• distinguish between different types of angles</li> <li>• use three letter notation to describe angles</li> <li>• measure angles, correct to the nearest degree, using a protractor</li> <li>• draw angles, correct to the nearest degree</li> <li>• make an accurate drawing of a triangle and other 2D shapes</li> <li>• find missing angles using the angle properties on a straight line, around a point and vertically opposite</li> <li>• find missing angles using the fact that angles in a triangle add up to <math>180^\circ</math> and the angle properties of special triangles</li> <li>• find missing angles using the fact that angles in a quadrilateral sum to <math>360^\circ</math></li> </ul>	Multiple Choice Quiz Common homework
	Unit 5	<ul style="list-style-type: none"> <li>• convert between equivalent fractions, decimals and percentages</li> <li>• express a number as a percentage of another number</li> <li>• compare quantities using percentages</li> <li>• calculate 50%, 25%, 10%, 75% of an amount</li> </ul>	Multiple Choice Quiz Common homework

Term 3	Unit 6	<ul style="list-style-type: none"> <li>• interpret and draw bar charts, dual charts and vertical line graphs</li> <li>• interpret and draw a pictogram</li> <li>• calculate the mean, median, mode and range of a set of data</li> <li>• use the language of probability and understand a probability scale from 0 to 1</li> <li>• calculate probabilities using a fraction, decimal or percentage</li> <li>• calculate the probability not happening</li> </ul>	Multiple Choice Quiz Common homework
	Unit 7	<ul style="list-style-type: none"> <li>• identify factors, multiples and primes</li> <li>• work out the square numbers and square roots up to <math>15 \times 15</math></li> <li>• work out the cube numbers and cube roots of 1, 2, 3, 4, 5 and 10</li> <li>• work out the answer to a calculation involving more than one operation</li> <li>• generate a sequence given a rule</li> <li>• use a calculator effectively</li> <li>• simplify a ratio</li> <li>• divide an amount into a given ratio</li> <li>• solve simple direct proportion problems</li> </ul>	Multiple Choice Quiz Common homework
	Unit 8	<ul style="list-style-type: none"> <li>• draw lines of symmetry on a 2D shape</li> <li>• identify the order of rotational symmetry of a 2D shape</li> <li>• complete a pattern/shape given information about reflective/rotational symmetry</li> <li>• define the words parallel and perpendicular</li> <li>• describe special triangles and quadrilaterals using the properties of the shape</li> <li>• calculate the area and perimeter of compound shapes</li> <li>• use the formula for area of a parallelogram</li> <li>• use the formula for area of a triangle</li> </ul>	Multiple Choice Quiz Common homework
	Unit 9	<ul style="list-style-type: none"> <li>• name 3D shapes</li> <li>• calculate the volume of cubes and cuboids</li> <li>• draw the net of a cube/cuboid</li> <li>• calculate the surface area of a cube/cuboid</li> <li>• draw and interpret the plan and elevation of a 3D shape</li> <li>• draw a 3D shape on isometric paper</li> <li>• convert between metric units for length</li> </ul>	Multiple Choice Quiz Common homework

Note on Assessment: Pupils will sit an end of term assessment at the end of each term. This will assess the topics that have been covered within the term.

## **Year 8**

		<b>What will I learn?</b>	<b>What will I do?</b>
Term 1	Unit 1	<ul style="list-style-type: none"> <li>• identify square numbers, cube numbers and their associated roots</li> <li>• calculate higher powers (2, 3, 4 and 5) of a number</li> <li>• write a number as a product of prime factors</li> <li>• calculate the LCM and HCF of two numbers</li> <li>• use BIDMAS to work out calculations involving more than one operation</li> <li>• add, subtract, multiply and divide decimals</li> <li>• round numbers to a given number of decimal places or significant figures</li> <li>• estimate calculations</li> </ul>	Multiple Choice Quiz Common homework
	Unit 2	<ul style="list-style-type: none"> <li>• substitute positive and negative values into a formula</li> <li>• draw a linear graph by completing a table of values</li> <li>• interpret and plot a linear graph from a real life problem</li> <li>• write an algebraic formula for a rule given in words</li> <li>• generate a sequence or specific terms using the nth term</li> <li>• find the nth term of an arithmetic sequence</li> <li>• describe how a sequence continues</li> <li>• recognise different types of sequences e.g. triangular, square, cube, Fibonacci-type sequences, geometric sequences</li> </ul>	Multiple Choice Quiz Common homework

Term 2	Unit 3	<ul style="list-style-type: none"> <li>• calculate the sum of interior angles in a polygon and use to find missing angles</li> <li>• use the sum of exterior angles of a polygon and use to find missing angles or the number of sides</li> <li>• calculate the area and perimeter of composite shapes</li> <li>• calculate the area of a trapezium</li> <li>• calculate the volume and surface area of a prism</li> <li>• convert between metric and imperial units</li> <li>• describe the number of faces, edges and vertices of 3D shapes</li> </ul>	Multiple Choice Quiz Common homework
	Unit 4	<ul style="list-style-type: none"> <li>• describe types of data</li> <li>• design a questionnaire and data collection tables</li> <li>• construct a dual bar chart and composite bar chart</li> <li>• construct a frequency polygon</li> <li>• interpret and construct a stem and lead diagram</li> <li>• calculate the mean, median, mode and range from a set of data</li> <li>• compare two sets of data</li> <li>• recognise and name different types of correlation</li> <li>• draw a scatter graph and draw a line of best fit to estimate values</li> </ul>	Multiple Choice Quiz Common homework
Term 3	Unit 5	<ul style="list-style-type: none"> <li>• add and subtract fractions</li> <li>• multiply fractions</li> <li>• divide fractions</li> <li>• convert between equivalent fractions, decimals and percentages</li> <li>• calculate the percentage of an amount with and without a calculator</li> <li>• work out a percentage increase/decrease</li> <li>• calculate the percentage change between two values</li> <li>• work out the original value of an item following a percentage increase/decrease</li> </ul>	Multiple Choice Quiz Common homework

Unit 6	<ul style="list-style-type: none"> <li>• write a ratio in the form 1:n or n:1</li> <li>• interpret a ratio using fractions</li> <li>• divide a given quantity into two or more parts</li> <li>• solve real life ratio problems</li> <li>• work out values that vary in direct proportion</li> <li>• work out values that vary inversely</li> <li>• solve best buy problems</li> <li>• use maps and scale drawings</li> <li>• construct a scale drawing</li> </ul>	Multiple Choice Quiz Common homework
Unit 7	<ul style="list-style-type: none"> <li>• identify expressions, terms, equations and formulae</li> <li>• simplify an algebraic expression by using the multiplication and division laws of indices</li> <li>• expand and simplify a linear bracket</li> <li>• factorise an algebraic expressions</li> <li>• solve linear equations (including equations involving brackets)</li> </ul>	Multiple Choice Quiz Common homework

Note on Assessment: Pupils will sit an end of term assessment at the end of each term. This will assess the topics that have been covered within the term.

### Extra-curricular opportunities

- Enter the Half-Termly Maths Competition

### How you can support your child's progress

- Practise mental maths skills i.e. addition, subtraction, multiplication and division
- Seek real life opportunities to challenge your child's mathematical knowledge for example calculating best buys, calculating how many pots of paint required to decorate a room etc.