

1 Year Plan: Maths

Half Term	Key Subject Content	Sequencing	Rationale
<p>Half Term 1: Sep – Oct</p>	<p>Entry Level Number: Count; Read, Write and Order</p>	<ul style="list-style-type: none"> <li>- Count, read and write numbers in numerals or words</li> <li>- Recognise different representations of numbers</li> <li>- Know the value of each digit in a number</li> <li>- Expanded form partitioning Recognise odd and even numbers</li> <li>- Compare and order numbers</li> <li>- Count on and back in one, ten, (hundred and thousand) from any number</li> <li>- Count on and back in steps of different numbers</li> <li>- Round numbers to the nearest 10</li> <li>- Order a set of positive and negative numbers, including placing them on a number line</li> </ul>	<p>Counting is an essential building block of mathematics. It is important because the meaning attached to counting is the key conceptual idea on which all other number concepts are based. Knowledge of number and place value underpins all other mathematical learning.</p> <p>An understanding of this is central to understanding our number system and underpins most written calculation methods. Students' understanding of the number system is extended to include negative numbers. It is useful to introduce these in ways students can easily identify, such as floors below ground level in a building or steps into a swimming pool some above and some below the surface of the water. This understanding can then be applied to more abstract concepts such as temperature.</p>
	<p>Number: Facts</p>	<p>Addition and subtraction facts for each number to 20</p>	<p>Memorising facts and lists can build the foundations for higher thinking and problem solving</p>
	<p>Number: Operations and problem solving</p>	<p>Addition and subtraction</p>	<p>Students build on their understanding of place value to develop a written method of addition and multiplication. Develop and rehearse the processes in written addition and subtraction. Calculations are presented in different contexts of money and measures to consolidate understanding of these processes.</p>
	<p>Number: Facts</p> <p>Number: Pattern</p>	<p>Multiplication and division facts and using these to derive other facts</p> <p>Exploring and recording patterns in addition and subtraction and of multiples, explaining the patterns and using them to make predictions. Knowing and using halving as the inverse of doubling. Halving even two-digit numbers with even and odd tens. Doubling numbers up to 50</p>	<p>When learning multiplication tables, students should experience a blend of practical, visual activities, pattern spotting, generalising as well as rote learning.</p> <p>Pattern identification plays an important role in helping to acquire a secure conceptual framework around number and counting.</p>



<p>Half Term 2: Oct – Dec</p>	<p>Number: Counting and Place Value Multiplication and division</p> <p>Measures: Time - Units and measuring instruments</p> <p>Geometry: Position, movement and pattern</p> <p>Geometry: Perimeter and area</p> <p>Geometry: 2D Shapes and 3D Shapes</p>	<p>Multiplying and dividing by 10, 100 and 1000</p> <p>Work with time, including 12-hour and 24-hour clocks – telling time and calculating time intervals. Use a wider range of standard units, including standard units of time, choosing units appropriate to a situation.</p> <p>Movements in a straight line and rotations. Mathematical vocabulary to describe position, direction and movement (including clockwise and anti-clockwise). Coordinates.</p> <p>Finding perimeter by adding lengths of sides. Find area by counting squares. Calculating area by multiplying length by width.</p> <p>2D and 3D shapes (recognising, describing features and sorting according to mathematical criteria) Recognise reflective symmetry</p>	<p>Students learn the relationships between units of time and other key vocabulary involving time. Students learning to tell the time on analogue and digital clocks, using 12 and 24 hour notation. The learning in this week requires regular revisiting through natural daily activities and routines.</p> <p>Work on fractions continued, in particular linking the images of quarter, half and three-quarters of a circle to fractions of a turn. Their understanding of fractions of a turn should be related to the movement of the minute hand on an analogue clock, introducing language of clockwise, o'clock and half past</p> <p>Area and perimeter are important to mathematics because they are the physical aspects of mathematics. They are the foundation for understanding other aspects of geometry such as volume and mathematical theorems that help us understand algebra, trigonometry, and calculus. Students are introduced to area as a measure of surface within a given boundary. Students investigate how shapes of the same area can have different perimeters and vice versa.</p> <p>Understanding colour and shape is a tool for learning many skills in all curriculum areas, from math and science to language and reading. Students gain practical experience of drawing and making shapes, in order to support their work on recognising, describing, comparing and classifying objects. Sorting is an important skill as it helps to develop the ability to think about the attributes of objects and how they relate to other objects. Sorting by colour and shape prepares for the future application of these skills in making graphs or searching for a book at the library.</p>
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	<p>Geometry: Angles Measures: Units and measuring instruments</p> <p>Number: Equipment</p> <p>Assess and review</p>	<p>Understand angle as a measure of turn Identify an angle as smaller than a right angle, or bigger than a right angle. Choose and use simple measuring instruments, reading and interpreting number and scales with some accuracy. Use a protractor to measure acute and obtuse angles to the nearest 10°</p> <p>Choose a suitable method of computation, using equipment where appropriate. Use a basic calculator</p> <p>Assess and review</p>	<p>Students learn that angles are made where lines/sides meet. This is an understanding of angles as a measure of turn, but the 'turn' is static i.e. the sides of the shape are not turning. The angle understanding also incorporates a dynamic understanding in which movement is made.</p> <p>Students learn the basic functions of a calculator and how to input information to perform a calculation. They are encouraged to record the calculation prior to inputting it into the calculator as this supports them to work logically and check results. They learn this is an expectation for some questions within the assessment paper and will enable them to receive more marks if the correct methods are shown.</p> <p>It is useful at regular intervals for teachers to consider the learning that has taken place over a term (or half term), assess and review students' understanding of the learning and use this to inform where the students need to go next.</p>
<p>Half Term 3: Jan – Feb</p>		<p>Assess and review</p>	<p>Students are provided with opportunities to revisit and apply previously learned mathematical skills at EL3 to functional mathematics. This will support the bridging between EL3 which uses little mathematics in context to EL3/Level 1 functional mathematics which is contextualised. Students can therefore focus on the key objectives of functional mathematics without having to learn required mathematical knowledge at the same time.</p> <p>This assessment point is undertaken using functional mathematics material. It is an opportunity for teachers to consider the learning that has taken place over a term</p>

			(or half term), assess and review student's understanding of the learning and use this to inform where the students need to go next.
Half Term 4: Feb - Apr	<p>Statistics: Mean, median, mode and range.</p> <p>Numbers - further learning and in context: Number symbols, place value, decimals, rounding and estimating, negative numbers</p> <p>Measures: Temperature</p> <p>Calculation Measures</p> <p>Fractions, decimals and percentages</p> <p>Statistics: Graphs</p>	<p>Order and compare numbers including integers and decimals Calculate and interpret the mean as an average using addition and division skills</p> <p>Understanding the value of digits – whole numbers Comparing and ordering numbers Reading and writing decimal numbers Understanding the value of digits - decimals Comparing and ordering decimals Place value and place holders – decimals Rounding and estimating– whole numbers and decimals Negative numbers – reading the weather, understanding frozen food packets.</p> <p>Comparing/reading thermometers with marked and unmarked divisions, using scales, comparing Fahrenheit to Celsius</p> <p>Problem Solving – addition, subtraction, multiplication and division (measures)</p> <p>Fractions – finding, equivalents, simplifying, converting Percentages – finding, increases, comparing Fractions to percentages – comparing, problem solving, calculating Ratio and proportion – direct proportion, sharing money, ratios as fractions, calculating bigger/smaller amounts Probability</p> <p>Collecting data – representing data Lists and tables – Comparing and finding information</p>	<p>When ordering numbers from a set of data, they can be introduced to averages. The median could be found once the numbers have been ordered, then leading on to finding the mean, consolidating their addition and division skills.</p> <p>Students consolidate understanding of value of digits in whole numbers and rounding before moving on to applying this to decimal numbers. Students are introduced to negative numbers and the real life contexts where these are used. They understand why 'numbers' appear to increase in negative numbers and what this means in context.</p> <p>Students use and calculate with negative numbers using the context of temperature (as it is often very cold at this time of year).</p> <p>Students revisit the four operations. The focus is on deciding on the correct computation method, recording of methods, inputting information into a calculator, reading a calculator and checking results.</p> <p>Students use knowledge of multiplication facts to identify factors and multiples of different numbers. In doing so, they can learn that prime numbers are ones whose only factors are themselves and 1. Students apply their knowledge of common factors to create equivalent fractions in order to compare, order and position on a number line. Students apply their knowledge of common multiples in order to add and subtract fractions with different denominators, by converting to equivalent fractions. Students recognise that fractions, decimals and percentages are all ways of expressing a proportion. Real life applications of ratio and proportion are numerous. The concept occurs in many places like preparing recipes, painting a house etc. Many word problems in mathematics include ratio and proportion.</p>

	Assess and review	<p>Graphs and charts – reading charts, tables and graphs, interpreting information</p> <p>Averages and range</p> <p>Assess and review</p>	<p>The concepts of mode, median and range can be taught through the measures or alternative data. It is important that students understand that mode and median are forms of average. Identifying the median will consolidate students' ordering skills, and the range will support with the concept of subtraction finding the difference. Students work on averages and measurement should reflect their ability in other number work in place value and calculation</p> <p>This assessment point is undertaken using functional mathematics material. It is an opportunity for teachers to consider the learning that has taken place over a term (or half term), assess and review student's understanding of the learning and use this to inform where the students need to go next.</p>
Half Term 5&6: Apr - Jun	<p>Functional Maths – applying mathematical skills at Level 1 to functional real life contexts and problems</p> <p>Assess and review</p>	<p>Select mathematics in an organised way to find solutions. Use appropriate checking procedures at each stage</p> <p>Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.</p> <p>Identify and obtain necessary information to tackle a problem</p> <p>Mathematical skills revisited and applied include:</p> <p>Assess and review</p>	<p>Students are provided with opportunities to revisit and apply previously learned mathematical skills at EL3 to functional mathematics. This will support the bridging between EL3 which uses little mathematics in context to EL3/Level 1 functional mathematics which is contextualised. Students can therefore focus on the key objectives of functional mathematics without having to learn required mathematical knowledge at the same time.</p> <p>Assess and review</p>