

## Subject Curriculum Overview for Academic Year 2022/2023

Subject: Mathematics		Subject Leader: Mr S Card	Stage G	AUTUMN TERM
Topic	Key Learning Points		Key Vocabulary	Assessments
Block 1 – Place value	<ul style="list-style-type: none"> <li>Understand the place value of numbers up to 10 000 000</li> <li>Read and write numbers up to 10 000 000</li> <li>Use &lt;, &gt; and = signs to compare numbers up to 10 000 000</li> <li>Order number up to 10 000 000</li> <li>Interpret and represent numbers on numbers lines</li> <li>Count forward and backwards in whole number steps</li> </ul>		Place Value Equal Inequality Ascending Descending	Blocks 1-2 will be assessed before the Autumn half term holiday
Block 2 – Addition, subtraction and the bar model	<ul style="list-style-type: none"> <li>Use number bonds to 10, 20 and 100</li> <li>Use bar models to represent addition and subtraction sums</li> <li>Add two numbers using column addition</li> <li>Add sets of numbers using column addition</li> <li>Subtract one number from another using column subtraction</li> <li>Subtract a set of numbers from another using column subtraction</li> </ul>		Add Subtract Commutative Associative	
Block 3 – Times tables and multiplication	<ul style="list-style-type: none"> <li>Use knowledge of 2, 5 and 10 times tables to solve problems</li> <li>Use knowledge of 4 and 8 times tables to solve problems</li> <li>Use knowledge of 3, 6 and 9 times tables to solve problems</li> <li>Use knowledge of 7 and 11 times tables to solve problems</li> <li>Multiply a two digit by a single digit number using long multiplication</li> <li>Solve problems requiring the use of long multiplication</li> </ul>		Multiple Long multiplication	Blocks 3-5 will be assessed before the Christmas holiday
Block 4 – The fraction wall	<ul style="list-style-type: none"> <li>Split shapes, objects or sets of objects into equal size parts</li> <li>Express proportions of shapes, objects or sets of objects using fractions</li> <li>Split 'wholes or ones' to create a fraction wall and look at equivalence</li> <li>Compare fractions within fraction wall using numerators</li> <li>Compare fractions within fraction wall using denominators</li> <li>Link understanding of fraction wall back to sets of objects.</li> </ul>		Fraction Numerator Denominator Equivalent	
Block 5 – Multiplying, dividing and rounding integers	<ul style="list-style-type: none"> <li>Multiply integers by 10, 100 and 1000</li> <li>Divide integers by 10, 100 and 1000</li> <li>Solve problems involving multiplication and division by 10, 100 and 1000</li> <li>Round numbers to the nearest 10, 100 and 1000</li> <li>Round numbers expressed in words to the nearest 10, 100 and 1000</li> <li>Solve problems involving rounding</li> </ul>		Divide Round Approximate	

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Topic	Key Learning Points		Key Vocabulary	Assessments
Block 6 – Negative numbers	<ul style="list-style-type: none"> <li>Understand the concept of negative numbers</li> <li>Count forwards and backwards in whole number steps involving negatives</li> <li>Compare positives and negatives</li> <li>Order positives and negatives in ascending or descending order</li> <li>Moving up and down the number line in integers</li> <li>Find the difference between two numbers involving negatives</li> </ul>		Negative number Difference Compare	Blocks 6-8 will be assessed before the Spring half term holiday
Block 7 – Measuring lengths and perimeter	<ul style="list-style-type: none"> <li>Accurately measure and draw lines in both cm and mm</li> <li>Convert between lengths measured in m, cm and mm</li> <li>Measure the perimeter of 2D shapes</li> <li>Calculate the perimeter of rectangles when dimensions are known</li> <li>Finding perimeters of more complex shapes when dimensions are known</li> <li>Calculate missing lengths from perimeter</li> </ul>		Units Perimeter Accurate Centimetre Millimetre Measure Convert	
Block 8 – Division	<ul style="list-style-type: none"> <li>Understand division as the process of sharing into groups</li> <li>Solve division problems by ‘counting on’</li> <li>Solve missing number multiplication problems and its links with division</li> <li>Recall and use times table facts to solve division problems</li> <li>Introduce short division by single digits with integer solutions</li> <li>Calculate fractions of amounts using division</li> </ul>		Divide Share Remainder	
Block 9 – Shapes and symmetry	<ul style="list-style-type: none"> <li>Identify a line of symmetry of a 2D shape</li> <li>Identify a line of symmetry of a pattern and for a diagram of a reflection</li> <li>Use a line of symmetry to produce or complete a symmetrical pattern</li> <li>Know and use the names of special types of triangle</li> <li>Know and use the names of polygons</li> <li>Compare and classify 2D shapes using given categories; e.g. number of sides</li> </ul>		Irregular Regular Polygon Equilateral Isosceles Scalene	Blocks 9-10 will be assessed before the Easter holiday
Block 10 – Time	<ul style="list-style-type: none"> <li>Read and write times using the digital 24-hour clock</li> <li>Write times using analogue 12-hour clock</li> <li>Convert between 12-hour time and 24-hour notation</li> <li>Solve problems involving converting between hours, minutes and seconds</li> <li>Solve problems involving converting between days, weeks, months</li> <li>Know calendar facts and use to solve related problems</li> </ul>		Hour Minute Second Digital Analogue 24-hour clock	

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Topic	Key Learning Points		Key Vocabulary	Assessments
Block 11 – Coordinates	<ul style="list-style-type: none"> <li>Use coordinates to describe the position of a point in the first quadrant</li> <li>Plot points in the first quadrant using co-ordinates</li> <li>Use coordinates to plot a set of points to construct a polygon</li> <li>Link compass directions to coordinates</li> <li>Describe movements as translations of a given unit to the left/right and up/down</li> </ul>		Coordinates Origin x-coordinate y-coordinate Axis Translation Vertex/Vertices Polygon	Blocks 11-12 will be assessed before the Summer half term holiday
Block 12 – Money	<ul style="list-style-type: none"> <li>Recognise the value of coins and solve problems involving them</li> <li>Add amounts of money</li> <li>Subtract amounts of money</li> <li>Record a practical money problem using £ and/or p notation</li> <li>Calculate change in transactions</li> <li>Solve problems involving money</li> </ul>		Pounds Pence Total change	
Block 13 – Equivalent fractions	<ul style="list-style-type: none"> <li>Express the relationship between quantities in a picture as a fraction</li> <li>Express the relationship between quantities in a table as a fraction</li> <li>Identify equivalent fractions from diagrams</li> <li>Create diagrams to show families of equivalent fractions</li> <li>Calculate a unit fraction of an amount when the answer is an integer</li> <li>Calculate a non-unit fraction of an amount when the answer is an integer</li> </ul>		Equivalent Integer	Assessment based on previous knowledge and new learning from current curriculum year
Block 14 – Presentation of data	<ul style="list-style-type: none"> <li>Collect data and construct tally and frequency tables</li> <li>Interpret a pictogram where the symbol represents multiple items</li> <li>Construct a pictogram where the symbol represents multiple items</li> <li>Interpret and construct bar charts</li> <li>Interpret data in tables</li> <li>Answer two-step questions about charts and tables e.g. 'How many more?'</li> </ul>		Tally Pictogram Bar Chart Table Survey	

## Subject Curriculum Overview for Academic Year 2022/2023

### How parents can support learning in the subject this academic year

At the beginning of each new block of work, students will stick a **Knowledge Checklist** into their orange book. This contains a list of the learning objectives for the block (given above), key vocabulary which has been carefully defined and important facts that the students need to know. Helping students to learn the vocabulary and key knowledge will be hugely beneficial to their progress. The objectives are referenced to a Mathswatch video clip which will explain the work, give examples and practise questions. These can be used for pre-learning to gain an insight into what is coming up, consolidation of understanding or catching up on work missed.

Practice is important so please encourage students to complete homework on a weekly basis, suggest they attend Maths Club (Monday after school) which allows them to work on any aspect of their maths with support from several teachers or develop their interest in other areas of maths. Talking and using maths at home is a great way to link maths to everyday situations, for instance scaling up or down ingredients for a recipe, discussing time or money, estimating costs, looking at best value products in the supermarket, converting between units of measure etc.

Due to the hierarchical structure of Mathematics, it is vital that students catch up on any work missed through absences. If a student is absent they are expected to use their Knowledge Checklist to locate a video clip which will explain the work. Students should copy down the examples and work through the questions given. When they return they will need to copy up the missed notes from another student. If they need support with the work then please encourage them to attend Maths Club where staff will be there to help and support.

### Recommended Reading

Murderous Maths Series – Poskitt Kjartan  
Look into my eyes (Ruby Redfort) – Lauren Child  
The number devil: A Mathematical adventure – Hans Magnus Enzensberger

### Points to note

Students are expected to bring a scientific calculator to every maths lesson. The model we currently recommend is the Casio Classwiz FX-83GTX-S. This calculator can be purchased through the school via parentpay.