



Year 7 Curriculum – 2024-2025						
	Autumn Term		Spring Term		Summer Term	
	1	2	1	2	1	2
Key Concepts	Sequences (Week 1 - 2) Understand and use algebraic notation (Week 3 - 4) Equality and equivalence (Week 5 - 6)	Place value and ordering integers and decimals (Week 7 - 9) Fraction, percentage and decimal equivalency (Week 10-12)	Solving problems with addition and subtraction (Week 14-15) Solving problems with multiplication and division (Week 16-18) Fractions and percentages of amounts (Week 19)	Operations and equations with directed number (Week 20-22) Addition and subtraction of fractions (Week 23-25)	Construction, measuring and using geometric notation (Week 26-28) Developing geometric reasoning (Week 29-31)	Developing number sense (Week 32-33) Sets and probability (Week 34-35) Prime numbers and proof (Week 36-37)
Knowledge & Understanding (National Curriculum) <i>Skills are across the whole year.</i>	Number <ul style="list-style-type: none"> Understand and use place value Compare and order numbers Round to powers of 10 and 1sf Write 1sf numbers in standard form (H) Use factors and multiples Order directed number Prime factorisation HCF and LCM Use the four operations with positive integers and decimals 					<i>*(H) indicates that it may be for higher ability only</i>



- Use a calculator
- Multiply and divide by positive powers of 10
- Order of operations
- **Multiply by 0.1 and 0.01 (H)**
- Use the four operations with directed number
- Add and subtract fractions including mixed numbers
- Use known facts
- Interchange between fractions and decimals below 1
- **Explore fractions above 1 (H)**
- Find fractions of an amount
- **Solve problems with fractions greater than 1 (H)**
- Interchange between fractions, decimals and percentages up to 100
- **Explore over 100**
- Find percentage of amount using mental and calculator methods

Algebra

- Function machines
- Algebraic notation
- Substitute into expressions, including directed numbers.
- **Simplify algebraic fractions (H)**
- Explore relate algebraic expressions
- Understand the difference between equality and equivalence
- Collecting like terms, including with directed number
- Form and solve one-step and two step equations
- Represent linear functions graphically
- Represent nonlinear functions graphically
- Recognise linear and non-linear sequences
- Generate sequences from an algebraic rule

Ratio, proportion, rates of change

- Convert metric units
- Use multiplicative relationships between known facts



Geometry and Measure

- Solve perimeter problems
- Areas of rectangles, parallelograms and triangles
- **Area of a trapezium (H)**
- Geometric notation
- Draw lines, angles and simple shapes
- Parallel and perpendicular lines
- Name and construct polygons
- Properties of triangles and quadrilaterals
- Angles at a point
- Adjacent angles on a straight line
- vertically opposite angles
- Angles in triangles and quadrilaterals
- **Angles in parallel lines (H)**
- **Simple angle proofs (H)**

Probability

- Use the language of probability
- calculate simple probabilities
- Use the probability scale
- Sample spaces
- Understand and use set notation, including Venn diagrams
- Know the sum of probabilities is 1
- **Complement of a set (H)**

Statistics

- Solve problems with line charts and bar charts
- Construct and interpret pie charts
- Find the mean, median and range.



	<p><u>Develop Fluency</u></p> <ul style="list-style-type: none"> → Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions powers and roots. → Select and use appropriate calculation strategies to solve increasingly complex problems → Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships → Substitute values in expressions, rearrange and simplify expressions, and solve equations → Move freely between different numerical, algebraic, graphical and diagrammatic representations (for example, equivalent fractions, fractions and decimals, and equations and graphs). → Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions → Use language and properties precisely to analyse numbers, algebraic expressions, 2D and 3D shapes, probability and statistics <p><u>Reason Mathematically</u></p> <ul style="list-style-type: none"> → Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations → Identify variables and express relations between variables algebraically and graphically → Make and test conjectures about patterns and relationships; look for proofs or counter examples → Begin to reason deductively in geometry, number and algebra, including using geometrical constructions → Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning → Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally <p><u>Solving Problems</u></p> <ul style="list-style-type: none"> → Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems → Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics → Begin to model situations mathematically and express the results using a range of formal mathematical representations → Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems; interpret their solution in the context of the given problem. 	
<p>Skills</p>	<p>R <i>Develop RESILIENCE</i></p>	<p>★ <i>Increase resilience through learning new concepts and building upon knowledge secured at Ks2</i></p>



		<ul style="list-style-type: none"> ★ <i>Making mistakes but being able to learn from and correct those mistakes</i> ★ <i>Attempting multi step problems even if they are not sure of how to get to solution</i> ★ <i>Making improvements on answers during class discussions (during cold calling)</i> ★ <i>Being able to try another method when problem solving and realising their first method has not worked.</i>
	<p>A Possess AMBITION</p>	<ul style="list-style-type: none"> ★ <i>Attempting questions and developing problem solving strategies</i> ★ <i>Completing homework to a high standard</i> ★ <i>Making detailed corrections to work independently.</i> ★ <i>Participating in group or whole class discussions each lesson</i>
	<p>I Demonstrate INTEGRITY</p>	<ul style="list-style-type: none"> ★ <i>Supporting peers through good manners and conduct, helping each other when somebody doesn't understand.</i> ★ <i>Being polite when somebody offers an incorrect answer.</i> ★ <i>Takes responsibility for actions and demonstrates improved behaviour in subsequent lessons</i>
	<p>S Embed Self-Discovery</p>	<ul style="list-style-type: none"> ★ <i>Independently seeks to make improvements in known areas of weakness outside of lesson time.</i> ★ <i>Discovers how to solve a problem or comes up with an alternative solution.</i>



	<p>E Display EMPATHY</p>			<p>★ Ask good questions, for example “What would happen if ...”</p>		
				<p>★ Offers equipment to those who don't have it.</p> <p>★ Shows respect for teacher and fellow students during class discussion.</p> <p>★ Being polite when somebody offers an incorrect answer.</p>		
<p>Curriculum Links</p>	<p>In year 6 pupils should be taught to use simple formulae, generate and describe linear number sequences, express missing number problems algebraically, find pairs of numbers that satisfy an equation with two unknowns and enumerate possibilities of combinations of two variables.</p>	<p>In upper KS2 pupils should be taught to identify the place value in numbers up to 1 million and determine the value of each digit.</p>	<p>By the end of year 6 pupils should be fluent in written methods in all four operations.</p> <p>Pupils should have also been taught how to convert between fractions, decimals and percentages.</p>	<p>In year 6 students should be able to use negative numbers in context such as temperatures.</p> <p>Pupils should have also been taught how to complete fraction arithmetic.</p>	<p>Ks2 content will cover drawing, recognising, describing 2D and 3D shapes. Pupils should be taught to compare and classify geometric shapes and find unknown angles in problems using basic angle facts.</p>	<p>By the end of Ks2 students should be fluent in written methods but will also develop some mental strategies. Pupils will make and test conjectures in different topic areas, such as fractions and decimals or geometry. They will also look at types of numbers, such as square and cube numbers.</p>
<p>Assessment</p>	<p>Each half term will consist of an end of unit assessment which will be teacher assessed and a checkpoint activity that will assess the retention of prior key learning.</p>					
<p>Aspirations & Careers</p>	<p>All pupils need to be numerate and able to use mathematics at both work and in everyday life beyond school. Mathematics is fundamental to future success and closely linked with financial success. It enhanced their ability to infer, problem solve, think logically, spot patterns as well as navigate any chosen career.</p> <p>Promote maths and further maths A levels (in Further Maths option and in classes). Promote careers in finance, engineering, computing etc and emphasise the importance of maths in these areas.</p>					

