

Year 7 Curriculum Overview [2022-2023]

Subject – Maths

	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
HT1	<u>Exploring Sequences</u> (Week 1&2)	<ul style="list-style-type: none"> Describe and continue a sequence diagrammatically Explore special sequences & recognising the differences between types of sequences (e.g. linear and non-linear) Predict, check and explain the next term or the missing term in a sequence Recognise sequences in tabular and graphical form Continue linear and non-linear sequences 	<ul style="list-style-type: none"> Mathsbox skills check 10 questions – once per week and one set for HWK – once a week Skills check tested once per half term in class Retrieval starters used 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning 	<ul style="list-style-type: none"> Financial management – predicting financial models Nuclear engineers – prediction of radioactive models 	<ul style="list-style-type: none"> Baseline Assessment (Week 1 – 2)
	<u>Understand and use algebraic notation</u> (Week 3 – 5)	<ul style="list-style-type: none"> Find the output of a function machine including algebraic examples Use inverse operations to find the input given the output including algebraic examples Form and simplify algebraic expressions Substitute values into expressions Generate sequences given a rule Represent one and two step functions graphically 				<ul style="list-style-type: none"> End of block formative assessment
	<u>Equality and equivalence</u> (Week 6 – 7)	<ul style="list-style-type: none"> Understand the meaning of equality Solve one-step equations using the four operations Understand like and unlike terms. Explore the meaning of equivalence Collecting like terms, and understand identities 			<ul style="list-style-type: none"> End of block formative assessment 	

HT2	<p><u>Place Value</u> (Weeks 1 – 3)</p> <ul style="list-style-type: none"> Recognise the place value of any number in an integer up to 1billion Understand and write numbers up to 1billion Work out intervals and position integers on a number line Round integers to powers of ten Compare two numbers using inequality signs Order a list of integers Calculate the range and median of a set of numbers Understand place value in decimals Position decimals on a number line Compare and order any number up to 1 billion <p><u>Ext:</u></p> <ul style="list-style-type: none"> Round to significant figures Explore 10, 100, 1000 as powers of ten etc Write positive integers in $A \times 10^n$ and convert to standard form Investigate negative powers of ten Write decimals in standard form 	<ul style="list-style-type: none"> Mathsbox skills check 10 questions – once per week and one set for HWK – once a week Skills check tested once per half term in class Retrieval starters used 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning 	<ul style="list-style-type: none"> Life skills Money management 	<ul style="list-style-type: none"> End of block formative assessment
	<p><u>Fractions, decimals and percentages</u> (Weeks 4 – 6)</p> <ul style="list-style-type: none"> Represent tenths and hundredths as diagrams and on number lines. Interchange fractional and decimal number lines Convert between fractions, decimals and percentages Understand the meaning of a percentage Use & interpret pie charts Represent fractions as diagrams and on a number line Identify and use simple equivalent fractions Understand fractions as division <p><u>Ext: Explore fractions above one, decimals and percentages</u></p>				

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HT3	<p><u>Solving problems with addition & subtractions</u> (Weeks 1 &2)</p>	<ul style="list-style-type: none"> To use mental strategies for addition and subtraction Use formal methods of addition and subtraction for integers and decimals, including choosing the most appropriate strategy. Solve problems in the context of perimeter, money & finance, frequency trees, tables and timetables. Also bar charts and line graphs. Ext Add and subtract numbers given in standard form 	<ul style="list-style-type: none"> Mathsbox skills check 10 questions – once per week and one set for HWK – once a week Skills check tested once per half term in class Retrieval starters used 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning 	<ul style="list-style-type: none"> Number skills involved in many areas of different work. 	<ul style="list-style-type: none"> End of block formative assessment
	<p><u>Solving problems with multiplication and division</u> (Weeks 3 to 5)</p>	<ul style="list-style-type: none"> To multiply by 10, 100 and 100 To multiply by 0.1 and 0.01 To convert metric units Use mental and formal methods of multiplication and division Find the HCF and LCM of small numbers Begin to understand and use order of operations Solve problems using areas of triangles, rectangles and parallelograms Solve problems using the men <p>Ext Solve problems using the area of trapezia and Explore multiplication and division in algebraic expressions</p>				<ul style="list-style-type: none"> End of block formative assessment

	<p><u>Fractions & percentages of amounts</u></p> <p>(Week 6)</p>	<ul style="list-style-type: none"> Find a fraction of a given amount Use a fraction to find a whole/ fraction of another amount Find a percentage of an amount using mental and calculator strategies Ext Solve problems with fractions greater than one and percentages greater than 100% 				<ul style="list-style-type: none"> End of block formative assessment
HT4	<p><u>Four operations with directed number</u></p> <p>(Weeks 1 to 3)</p>	<ul style="list-style-type: none"> Order directed numbers, both in contextualised and abstract situations Revisit four operations to include directed number Use a calculator with directed number Evaluate algebraic expressions with directed number Solve two-step equations (with and without a calculator) Continue to use the order of operations, including directed number <p>Ext</p> <ul style="list-style-type: none"> Understand that positive numbers have more than one square root Explore higher powers and roots 	<ul style="list-style-type: none"> Mathsbox skills check 10 questions – once per week and one set for HWK – once a week Skills check tested once per half term in class Retrieval starters used 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning 		<ul style="list-style-type: none"> End of block formative assessment
	<p><u>Addition and subtraction of fractions</u></p> <p>(Weeks 4 to 6)</p>	<ul style="list-style-type: none"> Understand representations of fractions Convert mixed numbers and improper fractions Understand and use equivalent fractions Add and subtract fractions with the same and a different denominator Add and subtract a combination of fractions and decimals Add and subtract improper fractions & mixed numbers Ext Add and subtract simple algebraic fractions 				<p>Summative end of term assessment</p>

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HT5	<p><u>Constructing measuring and using geometric notation.</u></p> <p>(Weeks 1 -3)</p>	<ul style="list-style-type: none"> Understand angles as a measure of turn Classify, measure and draw angles between 0 and 360 degrees Identify parallel and perpendicular lines Recognise properties and types of shapes. E.g. Triangles and quadrilaterals Identify polygons up to Decagons. Construct triangles using a compass (SSS, SAS, ASA) cvc Interpret and draw pie charts. Ext: Construct perpendicular and angle bisectors and understand and construct loci. 	<ul style="list-style-type: none"> Mathsbox skills check 10 questions – once per week and one set for HWK – once a week Skills check tested once per half term in class Retrieval starters used 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning 	<ul style="list-style-type: none"> Engineering and architecture and planning 	<ul style="list-style-type: none"> End of block formative assessment
	<p><u>Geometric reasoning.</u></p> <p>(Weeks 4-5)</p>	<ul style="list-style-type: none"> Understand and use the sum of angles around a point and on a straight line. Understand and use the equality of vertically opposite angles. Know and apply the sum of angles in a triangle and in a quadrilateral. Use this skill and apply to problem solving questions. Find and apply the sum of angles in a polygons. Investigate and use angles in parallel sides. Use known facts to obtain simple proofs. 				<ul style="list-style-type: none"> End of block formative assessment

	<p><u>Developing number sense.</u></p> <p>(Weeks 6)</p>	<ul style="list-style-type: none"> • Know and use mental addition, subtraction, division and multiplication strategies for integers. • Know and use mental arithmetic strategies for fractions and decimals. • Use factors to simplify calculations. 				<ul style="list-style-type: none"> • End of block formative assessment
HT6	<p><u>Developing number sense.</u></p> <p>(Weeks 1-2)</p>	<ul style="list-style-type: none"> • Use factors to simplify calculations. • Use estimation as a method for checking mental calculations. • Use known algebraic and number facts to derive other facts. • Know when to use a mental strategy, written method or a calculator. 	<ul style="list-style-type: none"> • Mathsbox skills check 10 questions – once per week and one set for HWK – once a week • Skills check tested once per half term in class • Retrieval starters used 	<ul style="list-style-type: none"> • Key words – learned and understood • Encourage use of subject language • Questioning Pupil explanations and reasoning 		Summative end of term assessment
	<p><u>Sets and probability.</u></p> <p>(Weeks 3-4)</p>	<ul style="list-style-type: none"> • Identify and represent sets. • Interpret and create Venn diagrams • Understand and use the intersection of sets and the union of sets. • Understand and use the complement of a set. • Know and use the vocabulary of probability and understand the probability scale. • Understand probabilities add up to 1 and calculate the probability of a single event. 				
	<p><u>Prime numbers and proof.</u></p> <p>(Weeks 5-6)</p>	<ul style="list-style-type: none"> • Find and use multiples. • Find factors of numbers and expressions. • Recognise prime, square and triangular numbers. • Find common multiples and factors including HCF and LCM. • Write a number as a product of prime factors. • Find the HCF and LCM of a set of numbers using a Venn diagram. • Make and test conjectures. Then use counterexamples to disapprove a conjecture. 				