

**Year 10 Curriculum Overview [2022-2023]
Subject – Maths- Foundation (sets y1/2/3)**

	Knowledge & Understanding			Literacy Skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]	Opportunities for developing literacy skills		
Autumn Term HT1	Collecting. Organising. Presenting and Analysing Data	<ul style="list-style-type: none"> Define the population in a study and understand the difference between population and sample. Understand what is meant by simple random sampling and bias in sampling. Calculate the mode, median, mean and range for ungrouped data. Design tables to classify data. Review calculation of averages presented in frequency tables. Interpret multiple and composite bar charts. Interpret and construct Pie Charts. Design tables to classify grouped data. Find modal class and calculate estimates of the range and median for grouped data and understand why they are estimates. Calculate estimates for the mean of grouped data and understand why they are estimates. Interpret and construct pictograms. Interpret and construct line graphs for time series data. 	<ul style="list-style-type: none"> Maths box skills check 10 questions once per week Mathsbox skills check 20 questions HWK- once a week Weekly retrieval chart current and long-term skills 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning Engage with worded exam questions Pronunciation of key words 	<ul style="list-style-type: none"> Statistician Meteorologist Scientist Medicine Engineer Data analyst Betting analyst 	Sam testing

	Primes, Factors and Multiples	<ul style="list-style-type: none"> Recap and use the terms odd, even, prime, factor (Divisor), multiple, common factor, common multiple, square, cube and root. Identify prime numbers. Use positive integer indices. Express a whole number as a product of its prime factors, including using power notation. Find the HCF and LCM of two whole numbers by listing or from their prime factorisations. 				Sam testing
	Algebraic Manipulation	<ul style="list-style-type: none"> Collecting like terms and expanding brackets. Simplify algebraic products and quotients. Expand products of two binomials. Recognise difference of two squares and perfect square expressions. Factorise quadratic expressions. Substitution Rearrange formulae. Formulate simple formulae and expressions from real-world contexts. Use algebra to construct arguments. 				Sam testing
HT2	Accuracy and Rounding	<ul style="list-style-type: none"> Understand place value before and after the decimal point. Round answers to stated decimal places and significant figures. Estimate answers. Error intervals. 	<ul style="list-style-type: none"> Maths box skills check 10 questions once per week Mathsbox skills check 20 questions HWK- once a week Weekly retrieval chart current and long-term skills 	<ul style="list-style-type: none"> Key words – learned and understood Encourage use of subject language Questioning Pupil explanations and reasoning Engage with worded exam questions Pronunciation of key words 	<ul style="list-style-type: none"> Medical Computing Engineer Mathematician 	Sam testing

	Mensuration	<ul style="list-style-type: none">• Perimeter• Area including circles.• Arcs and sectors.• Calculate the surface area and volume of prisms.• Calculate the surface area and volume of a pyramid, sphere, cone.• Pythagoras• Trigonometry				
	Proofs and Formulae	<ul style="list-style-type: none">• Recognise the difference between an equation and an identity, and show algebraic expressions are equivalent.• Formulate simple formulae and expressions from real-world contexts.• Substitute positive or negative numbers into more complex formulae, including powers, roots and algebraic fractions.• Rearrange formulae to change the subject, including cases where the subject appears twice, or where a power or reciprocal of the subject appears.				

Year 10 Curriculum Overview [2022-23]

Subject – Maths- Foundation (y3,y4)

	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]			
Spring Term HT3	Geometric constructions and calculations	<ul style="list-style-type: none"> • Construct the perpendicular bisector and midpoint of a line segment. • Construct the bisector of an angle formed from two lines. • Construct the perpendicular from a point to a line. • Construct the perpendicular to a line at a point. Know that the perpendicular distance from a point to a line is the shortest distance to the line. • Naming polygons • Know and use the sum of the angles at a point is 360° and that the sum of the angles on a line is 180° • Know and use; Vertically Opposite Angles are equal, Alternate Angles between parallel lines are equal, Corresponding Angles between parallel lines are equal. • Angles in polygons • Angles in triangles • Angles in quadrilaterals 			<ul style="list-style-type: none"> • Builders • Architect • Working in Construction 	Sam testing Half term test

	Direct and Inverse Proportion	<ul style="list-style-type: none"> • Simplify ratio. • Share in a ratio. • Solve simple ratio and proportion problems. • Direct proportion • Inverse proportion • 	<ul style="list-style-type: none"> • Maths box skills check • 10 questions once per week • Mathsbox skills check 20 questions • HWK- once a week • Weekly retrieval chart current and long-term skills 	<ul style="list-style-type: none"> • Key words – learned and understood • Encourage use of subject language • Questioning • Pupil explanations and reasoning • Engage with worded exam questions • Pronunciation of key words 	<ul style="list-style-type: none"> • Data analyst • Statistician 	Sam testing
	Percentage Change	<ul style="list-style-type: none"> • Convert between fractions, decimals and percentages. • Calculate percentage of a quantity, and express one quantity as a percentage of another, with and without calculator. • Increase or decrease quantities by a simple percentage • Percentage change • Repeated percentage change • Reverse percentages 			<ul style="list-style-type: none"> • Jobs that require basic number skills • Hairdressers • Retail • Education 	Sam testing
HT4	Solving of Equations	<ul style="list-style-type: none"> • Coordinates • Table of values to plot a graph. • Solve two linear simultaneous equations using a graph • Plot a quadratic graph. • Use graphs to find approximate roots of quadratic equations. • Set up and solve linear equation. • Solve quadratic equations by factorising. • Set up and solve two simple linear simultaneous equations. 	<ul style="list-style-type: none"> • Maths box skills check • 10 questions once per week • Mathsbox skills check 20 questions • HWK- once a week • Weekly retrieval chart current and long-term skills 	<ul style="list-style-type: none"> • Key words – learned and understood • Encourage use of subject language • Questioning • Pupil explanations and reasoning • Engage with worded exam questions • Pronunciation of key words 	<ul style="list-style-type: none"> • Engineer • Chemist • Pharmacist 	<p>Sam testing</p> <p>Sam testing End of term test</p>

	Fractions and Decimals	<ul style="list-style-type: none"> • Equivalence • Order integers, fractions, decimals and percentages. • Carry out complex fractional calculations using BIDMAS, including the use of mixed numbers, negative fractions and improper fractions. • Fractions of an amount. • FDP • Decimal division 			<ul style="list-style-type: none"> • Jobs that require basic number skills • Hairdressers • Retail • Education 	
	Bivariate Data	<ul style="list-style-type: none"> • Scatter graphs. • Errors and outliers 			<ul style="list-style-type: none"> • Statistician • Data Analyst • Scientist 	

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Summer Term HT5	Indices and Standard Form	<ul style="list-style-type: none"> • Index notation • Negative indices • Recognise simple powers of 2, 3, 4 and 5. • Laws of indices • Interpret and order numbers in standard form. • Convert numbers to and from standard form. • Calculate in standard form. 	<ul style="list-style-type: none"> • Flashback 4 – once per week • Mathsbox skills check 10 questions – once per week • Mathsbox skills check 20 questions HWK – once a week 	<ul style="list-style-type: none"> • Key words – learned and understood • Encourage use of subject language • Questioning • Pupil explanations and reasoning • Engage with worded exam questions 	<ul style="list-style-type: none"> • Engineer • Scientist • Researcher 	Sam testing
	Exact Calculations	<ul style="list-style-type: none"> • Fractional multiples • Multiples of π • Use of square roots in calculations with a calculator. • Exact trig values. 				
	Equations and Inequalities	<ul style="list-style-type: none"> • Linear equations recap • Inequalities on a number line. • Solve linear inequalities. • Recap plotting graphs • Gradient and intercept of straight lines • Sketch using $y=mx+c$ 				

HT6	Compound Units	<ul style="list-style-type: none"> • Use and convert standard units of measurement for length, area, volume/capacity, mass, time and money • Use and convert compound units. 	<ul style="list-style-type: none"> • Maths box skills check • 10 questions once per week • Mathsbox skills check 20 questions • HWK- once a week • Weekly retrieval chart current and long-term skills 	<ul style="list-style-type: none"> • Key words – learned and understood • Encourage use of subject language • Questioning • Pupil explanations and reasoning • Engage with worded exam questions • Pronunciation of key words 	<ul style="list-style-type: none"> • Scientists • Engineer • Traffic safety • Designers • Architects 	Sam testing
	2D and 3D Representations	<ul style="list-style-type: none"> • Bearings • Scale diagrams • Plans and elevations. 				