Stone Hill School
Curriculum Plan 2019/20
Mathematics Years 10-11

Intent: Key Stage 4 Mathematics focuses on preparing pupils for using Mathematics in everyday life, including the workplace. Pupils will work towards meaningful, nationally recognised qualifications; OCR Mathematics (Entry Level) and Functional Skills (which is equivalent to a GCSE grade).
- In Year 10, all of the units below will be covered with pupils in their Mathematics curriculum lessons.
- In Year 11, units will be selected based on the analysis of strengths and weaknesses in Year 10 to ensure that pupils achieve the highest possible qualification outcome by the end of the year.

Term	Week/s	Topic/Theme *Steam*	Learning Outcomes Knowledge and Skills To know, to use, to apply…	Literacy Link Numeracy Link SMSC Link
Autumn	1-4	Place value, addition and subtraction.	• Write, order and compare whole numbers up to 1000. Know the value of each digit in a 3-digit number. • Understand vocabulary associated with numerical calculations: sum, difference, share, total, twice, triple. • Add and subtract whole numbers from an initial value no greater than 1000.	
	5-8	Fractions, decimals and percentages.	• Add and subtract decimals in context, i.e. money, mensuration etc. • Recognise equivalent fractions including fractional quantities greater than 1 • Calculate thirds, quarters, fifths and tenths of quantities where the answer is an integer. Use fractions in context. • Order decimals and fractions. • Recognise equivalent fraction, decimal and percentage notation. • Understand that 1% is equivalent to dividing by 100. • Find 1%, 25%, 50% for three digit numbers, limited to results which are whole number answers.	**SMSC – percentages linked to cultural contexts.** **Gatsby 4**
	9-10	Multiples	• Know and use multiplication of numbers up to 10 by 3, 4, 5 and 10. • Recognise when a two-digit number is divisible by 2, 3, 4, 5 and 10.	
	11-12	Lists and Outcomes	• Use a two-circle Venn Diagram to sort and classify numeric and graphic data by two criteria. • Use systematic listing strategies to identify different outcomes of two combined events, i.e. rolling two dice. • Understand and complete a tally chart including numerical frequency. • Complete or extract information from lists with a maximum of two columns or two rows.	**SMSC – moral and cultural contexts for data.** **Gatsby 2,3**
Spring	1-2	Estimations and Approximations	• Round numbers less than 100 to the nearest ten or whole number. Estimate totals using rounded values. • Estimate approximate total cost and expected change for a number of items (no more than ten) to be bought.	

	3-5	Proportionality, Scales and Graphs	• Solve simple proportion problems by doubling constituent parts, e.g. adapt a four person recipe for eight people. • Read and mark a scale or dial whose divisions are labelled and represent 2, 5 or 10 units. • Read dial and scales in familiar contexts. • Interpret graphs in real-world contexts, e.g. money conversion, cost-time.	**SMSC – moral and cultural contexts for data.**
	6	Formulae	• Complete a sequence increasing or decreasing by 2, 3, 5 or 10. • Use a simple one-step function machine to determine outputs for given inputs.	
	7-8	Shapes and Solids	• Sort and classify polygons by number of sides, e.g. triangle, quadrilateral, pentagon, hexagon. • Distinguish between different triangles (equilateral, isosceles, right angled and scalene). • Know and use the terms side, edge, corner, square face, rectangular face, triangle face, cube, cuboid, cross-section, pyramid, sphere, cone, cylinder.	**Literacy – adjectives, adverbials**
	9-10	Symmetry and Transformations	• Identify lines and draw shapes which have horizontal and/or vertical lines of symmetry. • Rotate, reflect and translate simple shapes to form tessellated pattern. • Draw the rotation of a simple object through 90 degrees on squared paper.	**SMSC – Islamic patterns**
Summer	1-3	Units of Measure – Area, Perimeter and Angles.	• Calculate the area of rectangles drawn on cm square grids. • Understand and use the terms 'clockwise' and 'anticlockwise' and the idea of 'quarter turn', 'half turn' and 'three quarters turn'. • Recognise lines greater than, equal to, and less than 90 degrees in shapes. Measure acute angles to the nearest 10 degrees using a protractor.	**Gatsby – 5,6**
	4-5	Units of Measure - Money	• Use £ and p notation. • Select coins equivalent to an amount of money up to £5. • Order collection of coins and notes. • Give change from £5.	**Gatsby – 4,3**
	6-8	Units of Measure – Time	• Find start or end times for a planned time period. Calculate the duration given the start and end times. • Understand and use am/pm method of stating time. • Read and write time for digital and analogue clocks (in hours and in fifteen minute intervals). • Use a calendar to solve problems.	**Gatsby – 4, 3**

	9-11	Averages and Trends	• Construct and interpret a bar graph, using a frequency scale in 5s or 10s. • Draw and interpret a pictogram with scale in multiples of 2, 4, 5 or 10. • Order small list of numbers (up to ten numbers) to identify middle value (median). • Understand and use 'range' as the difference between the biggest and smallest recorded values on an appropriate frequency diagram. • Plot scatter graphs for pairs of data values. Interpret given lines of best fit for points on a given scatter graph.	**SMSC – contexts for data** **Literacy – descriptive language.**

Intended impact:
Pupils will leave Stone Hill School with qualifications that will help them to access Mathematics at a Post 16 provision.