



Year 10 Foundation Scheme of Work

Overview	<p>The purpose of the Maths curriculum is to equip students with uniquely powerful ways to describe, analyse and solve problems and to make them more prepared for the real world.</p> <p>We do this by providing a secure understanding of mathematical concepts, from basic principles of mathematics to complex topics that combine several areas of study into a single question.</p> <p>In Year 10 we continue to concentrate on retention of knowledge and depth of learning. In doing this, all our students have the opportunity to master key skills.</p>
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Autumn Term	<p>Half Term 1</p> <p>Rearrange Formulae</p> <ul style="list-style-type: none"> Rearrange formulae to change the subject in a geometrical context Change the subject of a formula involving the use of square roots and squares Calculate the radius or diameter when Sector area or Arc length is given <p>Linear Graphs</p> <ul style="list-style-type: none"> Plot and read Coordinates in all four quadrants Plot straight line graphs Recognise, sketch and interpret straight line graphs Find approximate solutions using a graph Find the coordinates of the midpoint of a line segment Real life graphss, conversion graphs, fuel bills graphs, fixed charge and cost per unit Plot and draw graphs of straight lines in the form $ax + by = c$ <p>$y = mx + c$</p> <ul style="list-style-type: none"> Identify and interpret gradients and intercepts of straight-line graphs Identify and interpret gradient from an equation $y = mx + c$ Find the equation of a straight line from a graph Parallel lines Find the equation of a line through two given points or through one point with a given gradient Identify and interpret the gradient from an equation $ax + by = c$ 	<p>Half Term 2</p> <p>Quadratic graphs, turning points and roots</p> <ul style="list-style-type: none"> Recognise, sketch and interpret graphs of quadratic functions Identify roots, intercepts and turning points of a quadratic function Find roots of a quadratic algebraically by factorisation Find approximate solutions using a graph Identify the line of symmetry of a quadratic graph <p>Linear Simultaneous</p> <ul style="list-style-type: none"> Solve two simultaneous equations in two variables (linear/linear) algebraically Find approximate solutions using a graph Derive two simultaneous equations, solve the equation and interpret the solution <p>Further Graphs</p> <ul style="list-style-type: none"> Recognise and sketch cubic graphs and the reciprocal graph Plot and interpret ... reciprocal graphs Recognise and interpret graphs that illustrate direct and inverse proportion 	<p>Assessment</p> <p>Half Term 1 The week before half term break, we have our first Foundation GCSE Paper.</p> <p>Half Term 2 Just before Christmas Break. Covering content from Autumn Term</p>
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Spring Term	<p>Compound Measures</p> <ul style="list-style-type: none"> ■ Interpret distance–time graphs. ■ Change between standard units e.g. time, mass, length, money, volume, area ■ Change between compound units e.g. speed, rates of pay, prices ■ Density and Pressure <p>Quadratic graphs, turning points and roots</p> <ul style="list-style-type: none"> ■ Sketch and interpret graphs ■ Roots, intercepts and turning points ■ Find roots of a quadratic algebraically by factorisation ■ Find approximate solutions ■ Identify the line of symmetry 	
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Spring Term	<p>Half Term 3</p> <p>Probability</p> <ul style="list-style-type: none"> ■ Apply systematic listing strategies ■ Describe probability using the probability scale, tables and frequency trees ■ Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments ■ Calculate expected outcomes ■ Mutually exclusive events sum to one ■ Experimental and theoretical probability ■ Venn diagrams and appropriate notation ■ Possibility spaces/sample spaces ■ Find a missing probability from a list or table including algebraic terms ■ Unbiased samples and effects of increasing sample size ■ Probability tree diagrams for independent and dependent events ■ Calculate the probability of independent and dependent combined events ■ Sets and combinations of sets using Venn diagrams <p>Standard Form</p> <ul style="list-style-type: none"> ■ Convert large and small numbers into standard form and vice versa ■ Add and subtract numbers in standard form ■ Multiply and divide numbers in standard form ■ Use of a calculator in standard form calculations 	<p>Half Term 4</p> <p>Simple Interest</p> <ul style="list-style-type: none"> ■ Use percentages in real-life situations e.g. price after VAT, value of profit or loss, simple interest, income tax <p>Ratio (further)</p> <ul style="list-style-type: none"> ■ Simplify ratios ■ Divide a quantity into a given ratio ■ Write ratios as fractions ■ Compare lengths, areas and volumes using ratio notation and scale factors ■ Solve ratio problems involving the change of a ratio within a question ■ Relate ratios to fractions and to linear functions <p>Growth & Decay</p> <ul style="list-style-type: none"> ■ Set up, solve and interpret the answers in growth and decay problems, including compound interest ■ Identify the interest rate in compound interest questions ■ Set up, solve and interpret the answers in growth and decay problems 	Assessment
			<p>Half Term 3 The week before half term break we have our 2nd Foundation GCSE Paper.</p> <p>Half Term 4 Just before Easter Break. Covering content from Autumn Term and Spring Term</p>

Summer Term	Half Term 5 Statistics <ul style="list-style-type: none"> ■ Draw and Interpret Frequency tables, bar charts, composite bar charts, pie charts, pictograms, vertical line charts, stem and leaf (including back-to-back) ■ Mean, mode, median, modal class ■ Range and outliers ■ Compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf ■ Recognise the advantages and disadvantages between measures of average ■ Scatter graphs - recognise correlation ■ Recognise types of data: primary secondary, quantitative and qualitative ■ Understand sample and population ■ Listing combinations ■ Sampling - infer properties of populations or distributions from a sample, while knowing the limitations of sampling ■ Interpret and construct tables and line graphs for time series data ■ Scatter graphs - draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends while knowing the dangers of so doing 	Half Term 6 is used for revision and catch up of Year 10 Curriculum.	Assessment
			Half Term 5 Last Week of HT5 third GCSE Foundation Paper Half Term 6 Summer Exam these exams cover all the topics learnt in year 9 in equal measures.

Useful Resources for Supporting Your Child at Home:	Homework:
<ul style="list-style-type: none"> ■ whgs-academy.sparxmaths.uk ■ curriculum.unitedlearning.org.uk ■ trockstars.com ■ www.bbc.co.uk/bitesize/subjects/zqhs34j ■ mmerevise.co.uk 	Sparx Homework is set automatically weekly, and students have 7 days to achieve 100%