

HIGHFIELDS SCHOOL

CURRICULUM OVERVIEW 2023-2024



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SUBJECT: GCSE FOUNDATION MATHEMATICS

EXAMINATION BOARD: OCR

AUTUMN TERM 1 - YEAR 9	SPRING TERM 1 - YEAR 9	SUMMER TERM 1 - YEAR 9
<ul style="list-style-type: none"> Using Pythagoras' Theorem Add, subtract, multiply and divide inc. decimals Use brackets and hierarchy of operations Rounding Use index notation Prime factors Add, subtract, multiply and divide fractions Fractions, decimals and percentages Percentage increase and decrease Solve problems involving fractions and percentages 	<ul style="list-style-type: none"> Find the area of rectangles and triangles and compound shapes Area of a parallelogram, circle and trapezium Plot and draw graphs of the form $y=mx+c$ Find the gradient and midpoint of a straight line Draw and interpret straight line graphs for real life situations Using a calculator Compound units e.g. speed and density 	<ul style="list-style-type: none"> Describe and transform 2D shapes using single or combined transformations; translation, rotation, enlargement and reflection Understand congruence and similarity Range, mode, median and mean - discrete data Mode and estimate of mean – continuous data Analysing maps using scales and bearings Constructions and Loci
<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>
AUTUMN TERM 2 - YEAR 9	SPRING TERM 2 - YEAR 9	SUMMER TERM 2 - YEAR 9
<ul style="list-style-type: none"> Use negative numbers in practical situations Indices Expand and simplify expressions Factorise expressions Substitute numbers into expressions and formula Solve a variety of linear equations Solve linear equations in which the unknown appears on both sides of the equation Inequalities Perimeter 	<ul style="list-style-type: none"> Divide a quantity in a given ratio Solve a ratio problem in context Solve problems involving direct proportion Name, estimate, measure and draw angles Distinguish between types of angles Give reasons for angle calculations Angles and parallel lines 	<ul style="list-style-type: none"> Problem solving and reasoning Probability; probability scale, relative frequency, sample space Use suitable data collection techniques Produce and interpret charts and diagrams including pictograms, bar charts, pie charts, line graphs, scatter graphs, two way tables, frequency polygons for grouped data and ordered stem and leaf Recognise correlation and draw and/or use lines of best fit
<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT School Exam. GCSE past paper.</p>

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AUTUMN TERM 1 - YEAR 10	SPRING TERM 1 - YEAR 10	SUMMER TERM 1 - YEAR 10
<ul style="list-style-type: none"> Working with negative numbers Algebra; substitution into kinematics formulae, functions, forming and solving equation Indices inc. negative Index Laws Estimate powers and roots Changing the subject of a formula LCM/HCF using prime factors 	<ul style="list-style-type: none"> Use and apply Pythagoras' Theorem Congruence and Similarity Congruence criteria Trigonometry – right-angled triangles Trigonometry – exact values Bounds 	<ul style="list-style-type: none"> Expanding products of two binomials. Factorising quadratic expressions of the form $x^2 + bx + c$, including the difference of two squares Solve quadratic equations algebraically by factorising; find approximate solutions using a graph Inequalities and number lines
<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>
AUTUMN TERM 2 - YEAR 10	SPRING TERM 2 - YEAR 10	SUMMER TERM 2 - YEAR 10
<ul style="list-style-type: none"> Interpret standard form $A \times 10^n$ Work out problems involving standard form with or without a calculator Fractions, decimals and percentages Ratio and proportion in different problems and contexts Use scale factors, scale diagrams and maps Interior and exterior angles in polygons 	<ul style="list-style-type: none"> Recognise and use types of sequence of triangle, square and cube numbers, arithmetic progressions, Fibonacci type sequences, quadratic sequences and simple geometric progressions Linear sequences – nth term Co-ordinates and graphs; equations of a straight line graph and interpreting gradient Solving simultaneous equations 	<ul style="list-style-type: none"> Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees Apply the property that probabilities sum to 1 Calculate the probability of independent and combined events, including using tree diagrams Combination of transformations Column vectors Area and volume – cones and spheres
<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT Past GCSE questions based on the above topics.</p>	<p>ASSESSMENT School Exam. GCSE past paper.</p>

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AUTUMN TERM 1 - YEAR 11	SPRING TERM 1 - YEAR 11	SUMMER TERM 1 - YEAR 11
<ul style="list-style-type: none">• Expressions, equations, formulae and inequalities.• Formulate simple formulae and expressions from real-world contexts.• Compound units• Identify and find equations of lines• Set up and solve two linear simultaneous equations in two variables• Construct the perpendicular bisector and midpoint of a line segment.• Construct the bisector of an angle formed from two lines.• Apply ruler and compass constructions to construct figures and identify the loci of points, to include real-world problems.• Use the scale of a map, and work with bearings.	<ul style="list-style-type: none">• Solve simple ratio and proportion problems• Interpret and construct charts appropriate to the data type• Recognise graphical misrepresentation through incorrect scales, labels, etc.• Recognise and sketch the graphs of simple linear and quadratic functions.• Interpret intercepts and, using symmetry, the turning point of graphs of quadratic functions.• Use inequality notation to write down an error interval• Apply and interpret limits of accuracy. <p style="text-align: center;">Revision</p>	<p style="text-align: center;">Revision</p>
<p>ASSESSMENT Past GCSE Exam Paper – Topic list to be shared.</p>	<p>ASSESSMENT Two past GCSE Exam Papers.</p>	

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AUTUMN TERM 2 - YEAR 11	SPRING TERM 2 - YEAR 11	SUMMER TERM 2 - YEAR 11
<ul style="list-style-type: none">Recap Pythagoras' theoremKnow and apply the trigonometric ratios, sin, cos and tan and apply them to find angles and lengths in right-angled trianglesIncrease and decrease by a percentageExpress percentage change as a decimal or fractional multiplier. Apply this to percentage change problems, including original value problemsSolve simple word problems involving quantities in inverse proportion or simple algebraic proportions.Construct a Venn diagram to calculate probabilities.Understand addition, subtraction and scalar multiplication of column vectorsRecap transformations	Revision	Revision and final exams
ASSESSMENT Past GCSE Exam Papers - Topic list to be shared.		