

KEVICC Key Stage 4 Curriculum Subject: Mathematics		Key Vocabulary and notation.																																			
Autumn Half-Term																																					
Term: Year 9 Autumn Term – Block Eight		Topic: Coordinates and Linear Graphs																																			
<p><b>What is the essential knowledge from this unit?</b>  <b>What do students need to remember and understand?</b></p>		<table border="0"> <tr> <td>Parallel</td> <td>Positive</td> </tr> <tr> <td>Horizontal</td> <td>Negative</td> </tr> <tr> <td>Vertical</td> <td>Intercept</td> </tr> <tr> <td>Straight Line</td> <td>Coordinate</td> </tr> <tr> <td>Axis</td> <td>y-intercept</td> </tr> <tr> <td>Equation</td> <td>Gradient</td> </tr> <tr> <td>Graph</td> <td>Rearrange</td> </tr> <tr> <td>Intercept</td> <td>Direct</td> </tr> <tr> <td>Linear</td> <td>proportion</td> </tr> <tr> <td>Equation</td> <td>Real-life</td> </tr> <tr> <td>Graph</td> <td>Curve</td> </tr> <tr> <td>Straight line</td> <td>Asymptote</td> </tr> <tr> <td>Table of values</td> <td>Interpret</td> </tr> <tr> <td>Function</td> <td>Product</td> </tr> <tr> <td>Gradient</td> <td>Reciprocal</td> </tr> <tr> <td>Slope</td> <td>Negative</td> </tr> <tr> <td>Steep</td> <td>Reciprocal</td> </tr> </table> <p>Mathematical questioning should be designed to unpick the structure of the maths and deepen the student's understanding. When students talk about mathematical concepts, they should develop the vital mathematical language that helps them explain their ideas fully.</p> <p>Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.</p>		Parallel	Positive	Horizontal	Negative	Vertical	Intercept	Straight Line	Coordinate	Axis	y-intercept	Equation	Gradient	Graph	Rearrange	Intercept	Direct	Linear	proportion	Equation	Real-life	Graph	Curve	Straight line	Asymptote	Table of values	Interpret	Function	Product	Gradient	Reciprocal	Slope	Negative	Steep	Reciprocal
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A8	Work with co-ordinates in all four quadrants																																				
<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>plot points in all four quadrants</li> <li>find and use coordinates of points identified by geometrical information, for example the fourth vertex of a rectangle given the other three vertices</li> <li>find coordinates of a midpoint, for example on the diagonal of a rhombus</li> <li>identify and use cells in 2D contexts, relating coordinates to applications such as Battleships and Connect 4</li> </ul>																																					
G11	Solve geometrical problems on co-ordinate axes																																				
<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>show step-by-step deduction in solving a geometrical problem.</li> </ul>																																					
A9	Plot graphs of equations that correspond to straight-line graphs in the coordinate plane; <u>Use the form <math>y = mx + c</math> to identify parallel lines and perpendicular lines;</u> <u>Find the equation of the line through two given points, or through one point with a given gradient.</u>																																				
<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>recognise that equations of the form <math>y = mx + c</math> correspond to straight-line graphs in the coordinate plane</li> <li>draw graphs of functions in which <math>y</math> is given explicitly or implicitly in terms of <math>x</math></li> <li>complete tables of values for straight-line graphs</li> <li>calculate the gradient of a given straight-line given two points or from an equation</li> <li>manipulate the equations of straight lines so that it is possible to tell whether lines are parallel or not</li> <li>work out the equation of a line, given two points on the line or given one point and the gradient.</li> </ul>																																					
A10	Identify and interpret gradients and intercepts of linear functions graphically and algebraically																																				
<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>recognise that equations of the form <math>y = mx + c</math> correspond to straight-line graphs in the coordinate plane with gradient <math>m</math> and y-intercept at <math>(0, C)</math>.</li> <li>work out the gradient and the intersection with the axes.</li> </ul>																																					
<p><b>What prior learning supports understanding of this content?</b></p> <ul style="list-style-type: none"> <li>Draw a coordinate grid.</li> <li>Work with negative numbers.</li> <li>Plot coordinates in all four quadrants.</li> <li>Substitute numerical values into expressions.</li> <li>Solve linear equations.</li> </ul>		<p><b>How does this content link to future learning?</b></p> <ul style="list-style-type: none"> <li>Generate linear sequences.</li> <li>Work out the value of the <math>n</math>th term of a linear sequence for any given value of <math>n</math>.</li> <li>Generate sequences with a given term-to-term rule.</li> <li>Generate a sequence where the <math>n</math>th term is given.</li> <li>Work out the value of the <math>n</math>th term of any sequence for any given value of <math>n</math>.</li> <li>Generate simple sequences derived from diagrams and complete a table of results that describes the pattern shown by the diagrams.</li> </ul>																																			
<p><b>Reading:</b> <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> <li>Reading and understanding mathematical questions and problems' – teacher input.</li> <li>Decoding complex examination questions - explain what they are asking the student to do' – teacher input.</li> <li>Following instructions to solve problems - break down the tasks – teacher input.</li> <li>Recognising terminology, numbers, and symbols.</li> </ul>		<p><b>Writing:</b> <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> <li>Using the correct subject specific terminology for numbers and symbols – examination papers, class books.</li> <li>Responding to questions that ask for an explanation or a reason – examination papers, class books.</li> <li>Self-evaluation, reviewing, reflecting and analysis of own work – class books, personalised learning checklists and analysis.</li> <li>Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.</li> </ul>																																			

**Key assessments:**

How will do students review the information learned?

End of block assessments.

AQA end of block assessments provide a quick progress check at the end of each block of learning to make sure students have understood the content being covered. These are available for both foundation and higher tiers.

End of term/year assessments and mock examinations.

End of term assessments assessing the students' progress towards targets and provide diagnostic information to modify future teaching.

End of year 9 and 10 examinations assessing the students' progress towards targets and provide diagnostic information to modify future teaching.

Two mock examinations seasons take place during year 11 using previous years AQA 8300 examination papers. Students to experience the full suite of papers at both Foundation and higher tiers using Non-calculator and Calculator requirements.

All examinations will explore the three examination papers at both foundation and higher tiers using non-calculator and calculator requirements.

How will feedback be seen?

Marked end of block, term assessments and mock examinations.

Personalised learning checklists for all assessments identifying strengths and areas of development.

Written teacher feedback and marking in compliance with faculty and College Marking Policies. Student responses to marking. Students

self-mark using purple pen. Verbal feedback given every lesson from teacher and peers as appropriate. Teacher and student self-

assessment of presentation of class books will be completed to ensure written work is of high standard and students are achieving their

potential.