

KEVICC Key Stage 4 Curriculum Subject: Mathematics			Key Vocabulary and notation.	
Summer Half-Term			<div>Compass</div> <div>Due East/West</div> <div>Point</div> <div>... of</div> <div>Angle</div> <div>Scale</div> <div>Turn</div> <div>Ratio</div> <div>Three letter</div> <div>Construct</div> <div>notations</div> <div>Parallel</div> <div>Enlarge</div> <div>Alternative</div> <div>Scale factor</div> <div>Corresponding</div> <div>Ratio</div> <div>Co-interior</div> <div>Protractor</div> <div>Due</div> <div>Convert</div> <div>South/West ...</div> <div>Similar</div> <div>Trigonometry</div> <div>Three-figure</div> <div><math>\sin \theta</math>, <math>\cos \theta</math>,</div> <div>North line</div> <div><math>\tan \theta</math></div> <div>Clockwise</div> <div>Perpendicular</div> <div>Bearing</div> <div>Opposite</div> <div>Bearing of</div> <div>Included</div> <div>... from ...</div> <div>angle</div> <div>Adjacent</div> <div>Parallelogram</div> <div>Angles at a</div> <div>Square</div> <div>point</div> <div>Trapezium</div> <div>Vertically</div> <div>Rectangle</div> <div>opposite</div> <div>Kite</div> <div>Straight</div> <div>Perpendicular</div> <div>Acute</div> <div>Bisect</div> <div>Obtuse</div> <div>Delta</div> <div>Reflex</div> <div>Exterior</div> <div>Right angle</div> <div>Interior</div> <div>Parallel</div> <div>Regular</div> <div>Transversal</div> <div>Polygon</div> <div>Alternate</div> <div>Sum</div> <div>Corresponding</div> <div>Total</div> <div>Angle</div> <div>Pentagon</div> <div>Line</div> <div>Hexagon</div> <div>Supplementary</div> <div>Octagon</div> <div>Points</div> <div>Demonstration</div> <div>Co-interior</div> <div>Justify</div> <div>Isosceles</div> <div>Proof</div> <div>Equilateral</div> <div>Compasses</div> <div>Scalene</div> <div>Line</div> <div>Rhombus</div> <div>Line segment</div> <div>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.</div> <div>Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.</div>	
Term: Year 10 Autumn Term – Block Two		Topic: Properties of Polygons and Bearings		
What is the essential knowledge from this unit? What do students need to remember and understand?				
	Specification content	Specification notes		
G3	Derive and use the sum of angles in a triangle (e.g. to deduce and use the angle sum in any polygon, and to derive properties of regular polygons)			
Students should be able to: <ul style="list-style-type: none"> <li>work out the size of missing angles at a point</li> <li>work out the size of missing angles at a point on a straight line</li> <li>know that vertically opposite angles are equal</li> <li>estimate the size of an angle in degrees</li> <li>justify an answer with explanations such as 'angles on a straight line', etc.</li> <li>understand and use the angle properties of parallel lines</li> <li>recall and use the terms alternate angles and corresponding angles</li> <li>work out missing angles using properties of alternate angles, corresponding angles and interior angles</li> <li>understand the consequent properties of parallelograms</li> <li>understand the proof that the angle sum of a triangle is <math>180^\circ</math></li> <li>understand the proof that the exterior angle of a triangle is equal to the sum of the interior angles at the other two vertices</li> <li>use angle properties of equilateral, isosceles and right-angled triangles</li> <li>use the fact that the angle sum of a quadrilateral is <math>360^\circ</math></li> <li>calculate and use the sums of interior angles of polygons</li> <li>recognise and name regular polygons: pentagons, hexagons, octagons, and decagons</li> <li>use the angle sum of irregular polygons</li> <li>calculate and use the angles of regular polygons</li> <li>use the fact that the sum of the interior angles of an <math>n</math>-sided polygon is <math>180(n - 2)</math></li> <li>use the fact that the sum of the exterior angles of any polygon is <math>360^\circ</math></li> <li>use the relationship interior angle + exterior angle = <math>180^\circ</math></li> <li>use the sum of the interior angles of a triangle to deduce the sum of the interior angles of any polygon.</li> </ul>				
G4	Derive and apply the properties and definitions of: special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus and triangles and other plane figures using appropriate language	including knowing names and properties of isosceles, equilateral, scalene, right-angled, acute-angled, obtuse-angled triangles including knowing names and using the polygons: pentagon, hexagon, octagon, and decagon		
Students should be able to: <ul style="list-style-type: none"> <li>recall the properties and definitions of special types of quadrilaterals</li> <li>name a given shape</li> <li>identify and use symmetries of special types of quadrilaterals</li> <li>identify a shape given its properties</li> <li>list the properties of a given shape</li> <li>draw a sketch of a named shape</li> <li>identify quadrilaterals that have common properties</li> <li>classify quadrilaterals using common geometric properties.</li> </ul>				
G15	Measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings	including the eight compass point bearings and three-figure bearings		
Students should be able to: <ul style="list-style-type: none"> <li>use and interpret maps and scale drawings</li> <li>use a scale on a map to work out a length on a map</li> <li>use a scale with an actual length to work out a length on a map</li> <li>construct scale drawings</li> <li>use scale to estimate a length, for example use the height of a man to estimate the height of a building where both are shown in a scale drawing</li> <li>work out a scale from a scale drawing given additional information</li> <li>use bearings to specify direction</li> <li>recall and use the eight points of the compass (N, NE, E, SE, S, SW, W, NW) and their equivalent three-figure bearings</li> <li>use three-figure bearings to specify direction</li> <li>mark points on a diagram given the bearing from another point</li> </ul>				

<ul style="list-style-type: none"> <li>draw a bearing between points on a map or scale drawing</li> <li>measure the bearing of a point from another given point</li> <li>work out the bearing of a point from another given point</li> <li>work out the bearing to return to a point, given the bearing to leave that point.</li> </ul>		
<b>What prior learning supports understanding of this content?</b> <ul style="list-style-type: none"> <li>Classify angles</li> <li>Identify and draw parallel and perpendicular lines</li> <li>Recognise types of triangle, quadrilateral and other polygons.</li> <li>Construct triangles given SSS, SAS, ASA</li> <li>Calculate and use angles at a point, angles on a straight line and vertically opposite.</li> <li>Calculate missing angles in triangles and quadrilaterals</li> </ul>	<b>How does this content link to future learning?</b> <ul style="list-style-type: none"> <li>Identify, describe, and construct congruent and similar shapes, including on co-ordinate axes, by considering rotation, reflection, translation and enlargement (including fractional and negative scale factors).</li> <li>Describe translations as 2D vectors.</li> <li>Describe the changes and invariance achieved by combinations of rotations, reflections and translations.</li> </ul>	
<b>Reading: Where in the unit are students supported to read complex academic text?</b> <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>	<b>Writing: Independent writing tasks and how they are structured</b> <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>	
<b>Key assessments:</b> 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.		