

KEVICC Key Stage 4 Curriculum Subject: Mathematics			Key Vocabulary and notation.	
Spring Half-Term				
Term: Year 11 Spring Term – Block Four		Topic: Circle Theorems		
What is the essential knowledge from this unit? What do students need to remember and understand?				
	Specification content	Specification notes		
G10h	Apply and prove the standard circle theorems concerning angles, radii, tangents, and chords and use them to prove related results	<div>Including:<ul style="list-style-type: none">cyclic quadrilaterals;angle at centre is equal to twice angle at circumference;angle in a semi-circle is 90°;angles in the same segment are equal;opposite angles in a cyclic quadrilateral sum to 180°;the angle between tangent and radius is 90°;tangents from an external point are equal in length;the perpendicular from the centre to a chord bisects the chord;alternate segment theorem;</div>		
<div>Students should be able to:<ul style="list-style-type: none">understand that the tangent at any point on a circle is perpendicular to the radius at that pointunderstand and use the fact that tangents from an external point are equal in lengthuse congruent triangles to explain why the perpendicular from the centre to a chord bisects the chordunderstand that inscribed regular polygons can be constructed by equal division of a circleprove and use the fact that the angle subtended by an arc at the centre of a circle is twice the angle subtended at any point on the circumferenceprove and use the fact that the angle subtended at the circumference by a semicircle is a right angleprove and use the fact that angles in the same segment are equalprove and use the fact that opposite angles of a cyclic quadrilateral sum to 180°prove and use the alternate segment theorem.</div>				
			<div>Radius External Diameter Opposite Circumference Interior Tangent angles Arc Length Sector Angle Segment Acute Chord Obtuse Semi-circle Right-angle Circle Isosceles π Reflex Perpendicular Edges Bisects Vertices Subtend Vertex Cyclic Calculate quadrilateral External Supplementary point Alternate Equal segment Mid-point Twice Centre of Approximately the circle Estimate Pythagoras' In terms of π theorem Formula Length Polygon Geometrical Constructed problems Half Proof Semi-circle Circle Vertically properties opposite Not drawn Internal accurately</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>	
What prior learning supports understanding of this content? <ul style="list-style-type: none">Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, tangent, arc, sector and segment.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).Derive and apply the properties and definitions of:<ul style="list-style-type: none">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.		How does this content link to future learning? <ul style="list-style-type: none">Consolidate all aspects of geometry and measures from key stage 3 and 4.Revise and explore subject content through examination questions and in context.		

<p>Reading: <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> • Reading and understanding mathematical questions and problems' – teacher input. • Decoding complex examination questions - explain what they are asking the student to do' – teacher input. • Following instructions to solve problems - break down the tasks – teacher input. • Recognising terminology, numbers, and symbols. 	<p>Writing: <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> • Using the correct subject specific terminology for numbers and symbols – examination papers, class books. • Responding to questions that ask for an explanation or a reason – examination papers, class books. • Self-evaluation, reviewing, reflecting and analysis of own work – class books, personalised learning checklists and analysis. • Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.
<p>Key assessments:</p> <p>How will do students review the information learned?</p> <p>End of block assessments.</p> <p>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.</p> <p>End of term/year assessments and mock examinations.</p> <p>End of term assessments assessing the students' progress towards targets and provide diagnostic information to modify future teaching.</p> <p>End of year 9 and 10 examinations assessing the students' progress towards targets and provide diagnostic information to modify future teaching.</p> <p>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.</p> <p>All examinations will explore the three examination papers at both foundation and higher tiers using non-calculator and calculator requirements.</p> <p>How will feedback be seen?</p> <p>Marked end of block, term assessments and mock examinations.</p> <p>Personalised learning checklists for all assessments identifying strengths and areas of development.</p> <p>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.</p>	