

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.	
Summer Half-Term 1 Lines and Angles			
Term: Year 7 Summer Term – Block Two	Topic: Geometric Reasoning	Sum	Rhombus
<p>What is the essential knowledge from this unit? What do students need to remember and understand?</p> <p>This block covers basic geometric language, names and properties of types of triangles and quadrilaterals, and the names of the other polygons. Angles rules will be introduced and used to form short chains of reasoning. The higher strand will take this further, investigating and using parallel line rules.</p> <p>National curriculum content covered:</p> <ul style="list-style-type: none"> Use language and properties precisely to analyse 2-D shapes. Begin to reason deductively in geometry including using geometrical constructions. Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right-angles, regular polygons, and other polygons that are reflectively and rotationally symmetric. Use the standard conventions for labelling sides and angles. Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies. Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles. Apply angle facts, triangle similarity and properties of quadrilaterals to derive results about angles and sides and use known results to obtain simple proofs. Understand and use the relationship between parallel lines and alternate and corresponding angles (H) <p>We know that breaking the curriculum down into small manageable steps should help students to understand concepts better. As a result, for each block of content in the scheme of learning we have provided the following 'small step' breakdown for this unit as follows:</p> <p>Lesson One - Understand and use the sum of angles at a point. Lesson Two - Understand and use the sum of angles on a straight line. Lesson Three - Understand and use the equality of vertically opposite angles. Lesson Four - Know and apply the sum of angles in a triangle. Lesson Five - Know and apply the sum of angles in a quadrilateral. Lesson Six - Solve angle problems using properties of triangles and quadrilaterals. Lesson Seven - Solve complex angle problems. Lesson Eight - Find and use the angle sum of any polygon (H). Lesson Nine - Investigate angles in parallel lines (H). Lesson Ten - Understand and use parallel line angles rules (H). Lesson Eleven - Use known facts to obtain simple proofs (H)</p> <p>Interleaving/Extension of previous work</p> <ul style="list-style-type: none"> Forming and solving linear equations. Revisiting addition and subtraction, including decimals. Understanding and use parallel lines rules. Understand and use the sum of angles in any polygon [internal & external] Derive simple proofs using angle rules. 		Angle	Point
		Degrees	Straight Line
		Line Segment	Polygon
		Notation	Interior
		Adjacent	Regular
		Vertically	Parallel
		Opposite	Perpendicular
		Line	Conjecture
		Intersect	Equal
		Isosceles	Transversal
		Equilateral	Intersect
		Scalene	Co-interior
		Right-angled	Corresponding
		Quadrilateral	Alternate
		Convex	Proof
		Concave	Demonstration
		Parallelogram	Interior Exterior
		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.	
		Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.	
<p>What prior learning supports understanding of this content?</p> <ul style="list-style-type: none"> Draw 2-D shapes using given dimensions and angles. Find unknown angles in any triangles, quadrilaterals, and regular polygons. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. 		<p>How does this content link to future learning?</p> <ul style="list-style-type: none"> Review Year 7 angle rules. Understand and use parallel lines and angles. Revisit geometric notation. Work out angles in special quadrilaterals. Find and use the sum of interior and exterior angles of a polygon. Prove simple geometric facts. 	
<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. Recognising patterns and relationships in mathematics. 		<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. 	

Key assessments:

How will students review the information learned?

End of block assessments.

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 covered.

A Core paper – it is envisaged that all students will take this paper, to provide a direct comparison with the performance of the rest of the cohort. All topics from each term will be covered, and the use of a calculator is expected.

End of term assessments.

A Foundation paper – students who are working below national expectations will have the opportunity to show their understanding of the material with more straightforward questions. Non calculator paper.

A Higher paper – students who are working at or above national expectations will have the opportunity to tackle more challenging questions on the same material, plus the extra objectives indicated as "Higher" in our scheme of learning. Non calculator paper.

How will feedback be seen?

Marked end of block and term assessments.

Personalised learning checklists for end of term 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.