

KEVICC Key Stage 4 Curriculum Subject: Mathematics		Key Vocabulary and notation.	
Spring Half-Term			
Term: Year 10 Spring Term – Block Four		Topic: Further Perimeter and Area	
What is the essential knowledge from this unit? What do students need to remember and understand?		Formula	Decagon
		Area	Rectangle
		Triangle	Estimate
		Rhombus	Infinity
		Trapezium	Radius
		Trapezia	Diameter
		Parallel	Tangent
		Perpendicular	Arc
		height	Sector
		Compound	Segment
		Component	Semi-circle
		shapes	π
		Perpendicular	Approximately
		Sector	Estimate
		Equilateral	In terms of π
		Isosceles	Decimal
		Scalene	place
		Length	Estimate
		Acute	Calculate
		Obtuse	Substitute
		Right-angle	Significant
		Reflex	figures
		Polygon	Cube
		Square	Cuboid
		Kite	Prism
		Rhombus	Cylinder
		Parallelogram	Pyramid
		Trapezium	Cone
		Polygon	Sphere
		Edges	Hemi-spheres
		Face	Uniform
		Vertices	Cross-section
		Vertex	Volume
		Equal	Surface area
		Triangle	Compound
		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.	
	Specification content	Specification notes	
G12	Identify properties of the faces, surfaces, edges and vertices of cube, cuboids, prisms, cylinders, pyramids, cones, and spheres		
Students should be able to: <ul style="list-style-type: none"> know the terms face, edge, and vertex (vertices) identify and name common solids, for example cube, cuboid, prism, cylinder, pyramid, cone and sphere understand that cubes, cuboids, prisms, and cylinders have uniform areas of cross-section. 			
G17	Calculate the perimeter of a 2D shape and composite shapes (review of Year 9) Calculate the area of composite shapes (review of Year 9) <u>Find the surface area of pyramids and composite solids</u>		
Students should be able to: <ul style="list-style-type: none"> work out the perimeter of a rectangle work out the perimeter of a triangle calculate the perimeter of shapes made from triangles and rectangles calculate the perimeter of compound shapes made from two or more rectangles calculate the perimeter of shapes drawn on a grid calculate the perimeter of simple shapes recall and use the formula for the circumference of a circle work out the circumference of a circle, given the radius or diameter work out the radius or diameter given the circumference of a circle use $\pi = 3.14$ or the π button on a calculator work out the perimeter of semicircles, quarter circles or other fractions of a circle recall and use the formula for the area of a circle work out the area of a circle, given the radius or diameter work out the radius or diameter given the area of a circle work out the area of semicircles, quarter circles or other fractions of a circle work out the surface area of spheres, pyramids, and cones work out the surface area of compound solids constructed from cubes, cuboids, cones, pyramids, cylinders, spheres, and hemispheres work out volume of spheres, pyramids, and cones work out the volume of compound solids constructed from cubes, cuboids, cones, pyramids, cylinders, spheres, and hemispheres solve real-life problems using known solid shapes. 			
G16	Know and apply formulae to calculate area of: <ul style="list-style-type: none"> triangles parallelograms trapezia 		
Students should be able to: <ul style="list-style-type: none"> recall and use the formulae for the area of a rectangle, triangle, parallelogram and trapezium work out the area of a rectangle work out the area of a triangle work out the area of a parallelogram work out the area of a trapezium calculate the area of shapes made from triangles and rectangles calculate the area of compound shapes made from two or more rectangles, for example an L shape or T shape calculate the area of shapes drawn on a grid calculate the area of simple shapes work out the surface area of nets made up of rectangles and triangles recall and use the formula for the volume of a cube or cuboid recall and use the formula for the volume of a cylinder recall and use the formula for the volume of a prism work out the volume of a cube or cuboid work out the volume of a cylinder work out the volume of a prism, for example a triangular prism. 			

<p>What prior learning supports understanding of this content?</p> <ul style="list-style-type: none"> Recall and use the formulae for the perimeter and area of a rectangle, triangle, parallelogram, and trapezium. Calculate the perimeter and area of shapes made from triangles and rectangles. Calculate the perimeter and area of compound shapes made from two or more rectangles, for example an L shape or T shape. Recall and work out the circumference of a circle, given the radius or diameter and vice-versa. Work out the circumference and area of a circle, semicircles, quarter circles or other fractions of a circle given the radius or diameter. 	<p>How does this content link to future learning?</p> <ul style="list-style-type: none"> 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.
<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>	