KEVICC Key Stage 4 Curriculum Subject: Mathematics		**Key Vocabulary and notation.**

Term: Year 9 Spring Term – Block Four	**Topic: Introduction to Perimeter, Circumference and Area**

What is the essential knowledge from this unit?
What do students need to remember and understand?

	Specification content	**Specification notes**
G9	Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, <u>tangent, arc, sector and segment</u>	

Students should be able to:
- recall the definition of a circle
- identify and name the parts of a circle
- draw the parts of a circle
- understand related terms of a circle
- draw a circle given the radius or diameter.

G12	Identify properties of the faces, surfaces, edges and vertices of cube, cuboids, prisms, cylinders, pyramids, cones, and spheres	

Students should be able to:
- 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 Calculate the area of composite shapes	

Students should be able to:
- 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 π = 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

G16	Know and apply formulae to calculate area of: • triangles • parallelograms • trapezia	

Students should be able to:
- 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

Key Vocabulary and notation.

Formula	Edges
Area	Face
Triangle	Vertices
Rhombus	Vertex
Trapezium	Equal Triangle
Trapezia	Decagon
Parallel	Rectangle
Perpendicular height	Estimate
	Infinity
Compound	Radius
Component shapes	Diameter
	Circumference
Perpendicular	
	Tangent
Sector	Arc
Equilateral	Sector
Isosceles	Segment
Scalene	Semi-circle
Length	π
Acute	Approximately
Obtuse	Estimate
Right-angle	In terms of π
Reflex	Decimal
Polygon	place
Square	Estimate
Kite	Calculate
Rhombus	Substitute
Parallelogram	Significant
	figures
Trapezium	Compound
Polygon	

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.

What prior learning supports understanding of this content?	How does this content link to future learning?
• Review angle rules. • Revisit properties of shapes. • Revisit equations of straight lines. • Recognise line symmetry in polygons and other shapes. • Reflect shapes in horizontal, vertical, and diagonal lines. • Understand and use parallel lines in angles. • Revisit geometric notation. • Workout angles in special quadrilaterals. • Find and use the sum of interior and exterior angles of a polygon. • Prove simple geometric facts.	• Consolidate and build on subject content of Transformations from key stage 3. • 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). • Describe translations as 2D vectors. • Describe the changes and invariance achieved by combinations of rotations, reflections and translations (including using column vector notation for translations).
Reading: *Where in the unit are students supported to read complex academic text?*	**Writing**: *Independent writing tasks and how they are structured*
• 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.	• 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 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.