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

Autumn Half-Term

Term: Year 9 Autumn Term – Block Four	Topic: Scale Drawings and Bearings

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

	Specification content	Specification notes
R2	Use scale factors, scale diagrams and maps	including geometrical problems

Students should be able to:
- use and interpret maps and scale drawings
- use a scale on a map to work out an actual length
- use a scale with an actual length to work out a length on a map
- construct scale drawings
- 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
- work out a scale from a scale drawing given additional information.

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:
- use and interpret maps and scale drawings
- use a scale on a map to work out a length on a map
- use a scale with an actual length to work out a length on a map
- construct scale drawings
- 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
- work out a scale from a scale drawing given additional information
- use bearings to specify direction
- recall and use the eight points of the compass (N, NE, E, SE, S, SW, W, NW) and their equivalent three-figure bearings
- use three-figure bearings to specify direction
- mark points on a diagram given the bearing from another point
- draw a bearing between points on a map or scale drawing
- measure the bearing of a point from another given point
- work out the bearing of a point from another given point
- work out the bearing to return to a point, given the bearing to leave that point.

Key Vocabulary and notation.

Compass	Due East/West
Point	. . . of
Angle	Scale
Turn	Ratio
Three letter	Construct
notations	Parallel
Enlarge	Alternative
Scale	Corresponding
factor	Co-interior
Ratio	Due
Protractor	South/West . . .
Convert	Trigonometry
Similar	sin θ, cos θ,
Three-figure	tan θ
North line	Perpendicular
Clockwise	Opposite
Bearing	Included
Bearing of	angle
. . . from . . .	

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?
- Use conventional terms and notations:
  points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons, and polygons with reflection and/or rotation symmetries
- Use the standard conventions for labelling and referring to the sides and angles of triangles
- Draw diagrams from written descriptions.
- Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles
- Understand and use alternate and corresponding angles on parallel lines

How does this content link to future learning?
- Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, tangent, arc, sector and segment.
- Identify properties of the faces, surfaces, edges and vertices of cube, cuboids, prisms, cylinders, pyramids, cones, and spheres.
- Calculate the perimeter of a 2D shape and composite shapes
- Calculate the area of composite shapes.
- Know and apply formulae to calculate area of triangles, parallelograms and trapezia.

Reading: *Where in the unit are students supported to read complex academic text?*
- 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.

Writing: *Independent writing tasks and how they are structured*
- 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.