KEVICC Key Stage 4 Curriculum Subject: Mathematics

Spring Half-Term

Term: Year 10 Spring Term – Block Five | **Topic: Graphs Recap and Extension**

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

	Specification content	Specification notes
G11	Solve geometrical problems on co-ordinate axes	
Students should be able to: • show step-by-step deduction in solving a geometrical problem.		
A9	Use the form $y = mx + c$ to identify parallel lines Find the equation of the line through two given points, or through one point with a given gradient	
Students should be able to: • recognise that equations of the form *y* = *m*x + c correspond to straight-line graphs in the coordinate plane • draw graphs of functions in which *y* is given explicitly or implicitly in terms of x • complete tables of values for straight-line graphs • calculate the gradient of a given straight-line given two points or from an equation • manipulate the equations of straight lines so that it is possible to tell whether lines are parallel or not • work out the equation of a line, given two points on the line or given one point and the gradient.		
A10	Identify and interpret gradients and intercepts of linear functions graphically and algebraically	
Students should be able to: • recognise that equations of the form *y* = *m*x + c correspond to straight-line graphs in the coordinate plane with gradient *m* and *y*-intercept at (0, C). • work out the gradient and the intersection with the axes.		

Key Vocabulary and notation.

Parallel	Line
Horizontal	Point
Vertical	Coordinates
Straight line	Substitute
Axis	Satisfies
Equation	Below
Graph	Above
Intercept	Simultaneous
Linear	Equations
Table of values	Interception
	Solutions
Gradient	Perpendicular
y-intercept	Product
Parallel	Reciprocal
Gradient	Negative
Scale	Reciprocal
Slope	Positive
Steep	Negative
Interpret	

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?
- Draw a coordinate grid (all four quadrants).
- Describe positions on the full co-ordinate grid (all four quadrants).
- Plot coordinates in all four quadrants.
- Simplify algebraic expressions.
- Substitute numerical values into formulae and expressions.
- Form and solve one-step and two-step equations.

How does this content link to future learning?
- Solve two simultaneous equations in two variables (linear / linear or quadratic/linear) algebraically.
- Find approximate solutions using a graph including the approximate solution of a quadratic equation by drawing a straight line to intersect with another quadratic equation.
- Translate simple situations or procedures into algebraic expressions or formulae; derive two simultaneous equations.
- Solve the equations and interpret the solution.

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.