KEVICC Key Stage 4 Curriculum Subject: Mathematics

Summer Half-Term

Term: Year 9 Summer Term – Block One | **Topic: Equations**

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

	Specification content	Specification notes
A2	Substitute numerical values into formulae and expressions, including scientific formulae	unfamiliar formulae will be given in the question

Students should be able to:
- use formulae from mathematics and other subjects expressed initially in words and then using letters and symbols. For example, formula for area of a triangle, area of a parallelogram, area of a circle, volume of a prism, conversions between measures, wage earned = hours worked × hourly rate + bonus
- substitute numbers into a formula.

A17	Solve linear equations in one unknown algebraically including those with the unknown on both sides of the equation	including use of brackets

Students should be able to:
- solve simple linear equations by using inverse operations or by transforming both sides in the same way
- solve simple linear equations with integer coefficients where the unknown appears on one or both sides of the equation or where the equation involves brackets.

Key Vocabulary and notation.

Expression	Unlike terms
Simplify	Binomial
Term	Simplify
Substitute	Quadratic
Coefficient	Solve
Equivalent	Equation
Positive	Unknown
Negative	Solution
Directed	Side
Substitute	Form
Solve	Unknown
Simplify	Check
Expand	Inequality
Multiply out	Satisfy
Bracket	Solution set
Identity	Greater/less
Product	than (or
Factor	equal)
Factorise	Inequality
Factorise	Form
fully	Balance
Common	Formula
Common	Variable
factor	Subject
HCF	
Like terms	

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?
- Understand multiplication and division facts.
- Simplify algebraic expressions.
- Substitute numerical values into formulae and expressions.
- Apply the four operations (+, -, x, ÷) to fractions.
- Expand brackets and collect like terms.
- Factorising expressions.
- Form and solve one-step and two-step equations.
- Understand equivalence of algebraic expressions.

How does this content link to future learning?
- Generate terms of a sequence from either a term-to-term or a position-to-term rule, including from patterns and diagrams.
- Recognise and use:
  - sequences of triangular, square and cube numbers
  - simple arithmetic progression
  - Fibonacci type sequences
  - quadratic sequences
  - and simple geometric progressions (r^n where n is an integer and r^n a rational number > 0)
  - other recursive sequences will be defined in the question.

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.