KEVICC Key Stage 4 Curriculum Subject: Mathematics

Summer Half-Term

Term: Year 9 Summer Term – Block Four | **Topic: Standard Form**

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

	Specification content	Specification notes
N2	Understand and use place value (e.g. when working with very large or very small numbers)	including questions set in context

Students should be able to:
- add, subtract, multiply and divide integers using both mental and written methods
- add, subtract, multiply and divide decimals using both mental and written methods
- add, subtract, multiply and divide positive and negative numbers
- interpret a remainder from a division problem
- recall all positive number complements to 100
- recall all multiplication facts to 12 × 12 and use them to derive the corresponding division facts
- perform money and other calculations, writing answers using the correct notation
- apply the four rules to fractions with and without a calculator
- multiply and divide a fraction by an integer, by a unit fraction and by a general fraction
- divide an integer by a fraction.

N9	Calculate with and interpret standard form $A \times 10^n$ where $1 \leq A < 10$ and n is an integer	with and without a calculator interpret calculator displays

Students should be able to:
- know, use and understand the term standard from
- write an ordinary number in standard form
- write a number written in standard form as an ordinary number
- order and calculate with numbers written in standard form
- solve simple equations where the numbers are written in standard form
- interpret calculator displays
- use a calculator effectively for standard form calculations
- solve standard form problems with and without a calculator.

Key Vocabulary and notation.

Base	SCI/EXP
Index/indices	Reciprocal
Power	Zero
Exponent	Root
Standard	Big
form	Small
Standard	Positive
(index) form	Negative
Negative	Whole
Place value	number
Convert	Ordinary
Multiplying	numbers
Dividing	Ascending
index law	order
Commutative	Descending
Scientific	order
notation	
Scientific calculators	

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?
- Add, subtract, multiply and divide integers and decimals using both mental and written methods.
- Add, subtract, multiply and divide positive and negative numbers.
- Interpret a remainder from a division problem.
- Recall all positive number complements to 100.
- Recall all multiplication facts to 12 × 12 and use them to derive the corresponding division facts.
- Form expressions using indices.

How does this content link to future learning?
- Revisit standard form using the four operators in context.
- Solve problems involving percentage change, including:
  - Percentage increase / decrease problems.
  - Original value problems.
  - Simple interest, including in financial mathematics.
  - Problems set in context.
  - Using a multiplier.

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.