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

Autumn Half-Term

Term: Year 10 Autumn Term – Block Two	**Topic: Measures and Accuracy**

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

	Specification content	Specification notes
N16	Apply and interpret limits of accuracy **including upper and lower bounds**	

Students should be able to:
• interpret scales on a range of measuring instruments, including those for time, temperature, and mass, reading from the scale or marking a point on a scale to show a stated value
• know that measurements using real numbers depend on the choice of unit
• recognise that measurements given to the nearest whole unit may be inaccurate by up to one half in either direction.

N16h	Apply and interpret limits of accuracy **including upper and lower bounds**	

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• know that measurements using real numbers depend on the choice of unit
• recognise that measurements given to the nearest whole unit may be inaccurate by up to one half in either direction
• make sensible estimates of a range of measures in real-life situations, for example estimate the height of a man
• choose appropriate units for estimating measurements, for example the height of a television mast would be measured in metres.

G14	Use standard units of measure and related concepts (length, area, volume / capacity, mass, time, money etc)	

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• know that measurements using real numbers depend on the choice of unit
• recognise that measurements given to the nearest whole unit may be inaccurate by up to one half in either direction
• make sensible estimates of a range of measures in real-life situations, for example estimate the height of a man
• choose appropriate units for estimating measurements, for example the height of a television mast would be measured in metres.

N13	Use standard units of mass, length, time, money, and other measures (including standard compound measures) using decimal quantities where appropriate	

Students should be able to:
• know and use standard metric and imperial measures
• know and use compound measures such as area, volume, and speed
• choose appropriate units for estimating measurements, for example a television mast would be measured in metres.

R1	Change freely between related standard units (e.g. time, length, area, volume / capacity, mass) and compound units (e.g. speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts	

Students should be able to:
• convert between metric measures
• recall and use conversions for metric measures for length, area, volume, and capacity
• use conversions between imperial units and metric units and vice versa using common approximations, for example 5 miles ≈ 8 kilometres, 1 gallon ≈ 4.5 litres, 2.2 pounds ≈ 1 kilogram, 1 inch ≈ 2.5 centimetres

R11	Use compound units such as speed, rates of pay, unit pricing, density, and pressure	

Students should be able to:
• understand and use compound measures and compound units including area, volume, speed, rates of pay, density and pressure
• understand speed and know the relationship between speed, distance, and time
• understand units in common usage such as miles per hour or metres per second. The values used in the question will make the required unit clear.

Key Vocabulary and notation:

Estimation
Approximation
Rounding
Significant figure
Decimal place
Estimate
BIDMAS
Nearest integer
Equal to
Approximate
Square root
Adjusting place value
Length
Distance
Mass
Matter
Capacity
Fluid
Volume
Average
Space
Speed
Distance
Time
Density
Mass per unit of volume
Cross-section
Ratio
Area
Area (x^2)
Volume (x^3)
Length
Measurements
Accuracy
Precision
Rounded
Error interval
Implied accuracy
Appropriate degree of accuracy
Measures

Units of measurement
Conversions
Millimetre (mm)
Gram (g)
Millilitre (ml)
Centimetre (cm)
Kilogram (Kg)
Centilitre (cl)
Metre (m)
Tonne (t)
Inch
Pound
Gallon (g)
Litre (l)
Kilometre (km)
Miles per hour (mph)
Miles per gallon (mpg)
Time
Hours
Minutes
Seconds
Calculate
Reasoning
Money
Pounds (£)
Pence (p)
Prices
Rates of pay
Unit pricing
Numerical
Upper and lower bounds
Discrete data
Continuous data
Error
Nominal value
Absolute error
Percentage error

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?
- Interpret scales on a range of measuring instruments, including those for time, temperature and mass, reading from the scale or marking a point on a scale to show a stated value. - Know that measurements using real numbers depend on the choice of unit. - Recognise that measurements given to the nearest whole unit may be inaccurate by up to one half in either direction. - Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures). - Use inequality notation to specify error intervals due to truncation or rounding.	- Derive and use the sum of angles in a triangle (e.g. to deduce and use the angle sum in any polygon, and to derive properties of regular polygons). - Derive and apply the properties and definitions of: - Special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus and triangles and other plane figures using appropriate language. - Including knowing names and properties of isosceles, equilateral, scalene, right-angled, acute-angled, obtuse-angled triangles. - Including knowing names and using the polygons: pentagon, hexagon, octagon, and decagon.
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.