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

Autumn Half-Term

Term: Year 10 Autumn Term – Block Four	Topic: Statistical Measures

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

	Specification content	Specification notes
S4	Interpret, analyse, and compare the distributions of data sets from univariate empirical distributions through: • appropriate measures of central tendency (median, mean, mode and modal class) spread (range, including consideration of outliers, **quartiles, and inter-quartile range**)	

Students should be able to:
- decide whether data is qualitative, discrete, or continuous and use this decision to make sound judgements in choosing suitable diagrams for the data
- understand the difference between grouped and ungrouped data
- understand the advantages and disadvantages of grouping data
- distinguish between primary and secondary data
- use lists, tables, or diagrams to find values for the above measures
- find the mean for a discrete frequency distribution
- find the median for a discrete frequency distribution
- find the mode or modal class for frequency distributions
- calculate an estimate of the mean for a grouped frequency distribution, knowing why it is an estimate
- find the interval containing the median for a grouped frequency distribution
- choose an appropriate measure to be the 'average', according to the nature of the data
- identify outliers
- find patterns in data that may lead to a conclusion being drawn
- look for unusual data values such as a value that does not fit an otherwise good correlation.

| S4h | Interpret, analyse, and compare the distributions of data sets from univariate empirical distributions through:
• appropriate graphical representation involving discrete, continuous, and grouped data, including box plots
• appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers, quartiles, and inter-quartile range) | |

Students should be able to:
- calculate quartiles and inter-quartile range from a small data set using the positions of the lower quartile and upper quartile respectively
- read off lower quartile, median and upper quartile from a cumulative frequency diagram or a box plot and calculate inter-quartile range
- find an estimate of the median or other information from a histogram
- choose an appropriate measure according to the nature of the data to be the 'average'
- compare two diagrams in order to make decisions about a hypothesis
- compare two distributions in order to make decisions about a hypothesis by comparing the range or the inter-quartile range if available, and a suitable measure of average, such as the mean or median.

S5	Apply statistics to describe a population

Students should be able to:
- use measures of central tendency and measures of dispersion to describe a population
- use statistical diagrams to describe a population.

S1	<u>Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling</u>

Students should be able to:
- find patterns in data that may lead to a conclusion being drawn
- look for unusual data values such as a value that does not fit an otherwise good correlation
- understand that samples may or may not be representative of a population
- understand that the size and construction of a sample will affect how representative it is.

What prior learning supports understanding of this content?	How does this content link to future learning?
o Revisit the median and mean, including finding the total given the mean o Find the mean of grouped data. o Work out the mode and modal class o Choose the appropriate average o Find unknown data values given the mean or changes in the mean. o Find the median from a table of values.	• Construct and interpret diagrams for grouped discrete data and continuous data, o i.e. histograms with equal and unequal class intervals and cumulative frequency graphs and know their appropriate use. • Interpret, analyse, and compare distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous, and grouped data, including box plots. • Interpret, analyse, and compare the distributions of data sets from univariate empirical distributions through consideration of outliers, quartiles, and inter-quartile range.
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.