

Statistics Curriculum Map 2023-24

- Students will have appreciation of data and the various places data can be found.
- Students should have some understanding of the difficulties with working with data.
- Students should have experience with collecting data (possibly in other curriculum areas).
- Students should have an awareness that data can be presented in a large variety of different forms.
- Students should have prior knowledge of some of these topics, as they are encountered at Key Stage 3. In particular: bar charts; pie charts; stem and leaf diagrams.
- Students should also have an awareness that graphs can be used to better represent data.
- Knowledge of how to use a protractor.
- Students should have met finding the mean, mode, median and range at Key Stage 3.
- Students should be able to find the average (mean) of four numbers.
- Students should have an awareness of the probability scale.
- Students should know that probability can be expressed as fractions, decimals and percentages.
- Students should be able to represent a basic probability of something occurring numerically and using words.
- Students should have a good understanding of probability.
- Knowledge of tree diagrams when the probability remains the same.
- Students should have some experience of calculating percentage increases and decreases.
- Students should have experience of substituting numbers into formulae.

Curriculum Intent:

Our curriculum is designed to recognise students' prior learning and allow them to develop interpersonal skills Our intent is to aim to ensure that all children:

- become fluent in fundamental mathematics.
- are able to reason mathematically.
- can solve problems by applying their maths skills.

We provide appropriate level of challenge and encourage students to explain their choices.

This will translate into better GCSE outcomes, more post 16 options and improve their social mobility.

SMSC

Spiritual: The study of mathematics enables students to make sense of the world around them and we strive to enable each of our students to explore the connections between their numeracy skills and every-day life Developing deep thinking and an ability to question the way in which the world works promotes the spiritual growth of students. Students are encouraged to see the sequences, patterns, symmetry and scale both in the man-made and the natural world and to use math's as a tool to explore it more fully.

Moral: The moral development of students is an important thread running through the mathematics syllabus Students are provided with opportunities to use their math's skills in real life contexts, applying and exploring the skills required in solving various problems For example, students are encouraged to analyze data and consider the implications of misleading or biased statistical calculations All students are made aware of the fact that the choices they make lead to various consequences They must then make a choice that relates to the result they are looking for The logical aspect of this relates strongly to the right/wrong responses in math's.

Social: Problem solving skills and teamwork are fundamental to mathematics through creative thinking, discussion, explaining and presenting ideas Students are always

encouraged to explain concepts to each other and support each other in their learning in this manner, students realize their own strengths and feel a sense of achievement which often boosts confidence Over time they become more independent and resilient learners

Cultural: Mathematics is a universal language with a myriad of cultural inputs throughout the ages Various approaches to mathematics from around the world are used and this provides an opportunity to discuss their origins This includes different multiplication methods from Egypt, Russia and China, Pythagoras' Theorem from Greece, algebra from the Middle East and debates as to where Trigonometry was first used We try to develop an awareness of both the history of math's alongside the realization that many topics we still learn today have travelled across the world and are used internationally

ORACY

All staff actively planning to use the following Oracy strategies:

- Exploratory Talking Points
- Structured Grid - Turn and Talk
- Odd One Out with sentence stems
- Concept Cartoons
- What's wrong/find the fib.
- Presentational talk

LITERACY/NUMERACY/IT

All staff actively planning to use the following resources/strategies:

- Key vocabulary
- Sharing learning objectives
- Command words, sentence structure, Tier 1(Basic and common vocabulary used in everyday conversations), Tier 2(Words that often have multiple meanings and are referred to as academic vocabulary words) and Tier 3 (Words that are subject specific)
- Sparx
- Blookets
- Quizzes'

Cross curricular links: Science, Geography, History, PE, Technology

Year 10 Higher

	Autumn Term 14 weeks	Spring Term 12 weeks	Summer Term 13 weeks
Module Title	The collection of data	Processing, representing and analysing data	Processing, representing and analysing data
Learning Focus	Planning, Types of data, Population and sampling, Estimation, Collecting data.	Tabulation, diagrams and representation	Measures of central tendency, Measure of dispersion, Scatter diagrams, and correlation

Careers Focus	Teacher, Professor, Mathematicians, Astronomers, Chemists, Physicists, Computer and Information Research Scientist, Air Traffic Controller, Application Software Developer, Medical Scientist, Automotive Engineer, Risk Analyst, Architect, Chemical Engineer, Application Software Developer, Electronics Engineer, Carpentry, Brick laying, Garden design, Interior Decorating		Retail, Accountants, Actuary, Finance and Business Advisor, Data Analyst, Tax Accountant, Forensic Accountant, Fund Manager, Stockbroker, Retail Banker, Research Scientist, Sports and Analyst, Medical research, Molecular and Cellular Biologist, Banking and Finance, Aviation, Astronomy, Teacher, Professor, Mathematicians, Statisticians, Financial Analyst		Business Advisor, Data Analyst, Tax Accountant, Forensic Accountant, Fund Manager, Stockbroker, Retail Banker, Research Scientist, Geospatial technician, Land surveyor, Meteorologist, Archaeologist, Cartographer, Land Surveyor, Teacher, Professor, Mathematicians, Cryptologists, Statisticians, Financial Analyst, Architect	
Assessment	1	2	3	4	5	6

Year 11 Higher						
	Autumn Term 14 weeks		Summer Term 13 weeks		Spring Term 12 weeks	
Module Title	Processing, representing and analysing data, Probability.		Probability distributions processing, representing and analysing data, Statistical enquiry cycle/A03.		Revision	
Learning Focus	Time series, Experimental and theoretical probability, Further summary statistics		Probability distributions, Standardised scores, Quality assurance, Mini investigation			
Careers Focus	Teacher, Professor, Mathematicians, Astronomers, Chemists, Physicists, Computer and Information Research Scientist, Air Traffic Controller, Application Software Developer, Medical Scientist, Automotive Engineer, Risk Analyst, Architect, Chemical Engineer, Application Software Developer, Electronics Engineer, Carpentry, Brick laying, Garden design, Interior Decorating		Retail, Accountants, Actuary, Finance and Business Advisor, Data Analyst, Tax Accountant, Forensic Accountant, Fund Manager, Stockbroker, Retail Banker, Research Scientist, Sports and Analyst, Medical research, Molecular and Cellular Biologist, Banking and Finance, Aviation, Astronomy, Teacher, Professor, Mathematicians, Statisticians, Financial Analyst		Business Advisor, Data Analyst, Tax Accountant, Forensic Accountant, Fund Manager, Stockbroker, Retail Banker, Research Scientist, Geospatial technician, Land surveyor, Meteorologist, Archaeologist, Cartographer, Land Surveyor, Teacher, Professor, Mathematicians, Cryptologists, Statisticians, Financial Analyst, Architect	
Assessment	1	2	3	4	5	6

