



## Year 8 Maths

### Aims:

- Create students who think, write, and speak like mathematicians.
- Build upon introductory concepts and links experienced in Year 7
- Understand how to structure and record their thoughts and processes in a clear and logical way
- Algebra focus to allow their generalisations, arguments, and justifications to become more robust.

### Content:

During the first term of Year 8 the focus will be on number work that continues to build understanding from content they are already familiar with. Within this unit of work students will answer the STRIPE question "Does money make us rich?"- Using percentage increase and decrease to investigate financial mathematics. During the second half term students will spend time working with shape; from their basic properties and classifications to calculating missing angles in polygons. This topic will introduce key geometrical notation and provide key preparation for the upcoming algebra content by focussing on how answers are structured.

In term 2 students build on their introduction to algebraic notation in Year 7 by moving onto expanding brackets and applied substitution. A study into the Body Mass Index formula will provide an answer to the driving question of "How can we stay healthy?" Algebraic techniques are continued in the second half through solving equations for a sustain period to help develop a high level of fluency before a cross-topic link to area is made.

Sequences, scatter graphs and relative frequency provide different ways for mathematical topics to answer the driving question "How can the past and present influence the future?" during the final term

### Curriculum Map

Year	Term	Curriculum	Assessment
8	Term 1	Standard from, multiplying and dividing fractions, and percentages of amounts to develop numerical methods. Geometrical focus from properties of triangles and quadrilaterals to calculating angles in polygons	Topic Assessments End of Unit Assessments
	Term 2	Algebraic focus on simplifying, expanding brackets and substitution before moving to solving equations and applying all methods to area of 2D shapes.	Topic Assessments End of Unit Assessments
	Term 3	Sequences and coordinates are covered before combining the two techniques to create straight line graphs. Scatter graphs and relative frequency used to show how predications can be made using maths.	Topic Assessments End of Unit Assessments

### Assessment:

In class feedback will be provided throughout lessons using a variety of methods that check for understanding such as mini-whiteboards, vote cards, and carefully selected questioning. Students will receive regular and specific feedback between lessons using peer and self-review techniques to develop the reflective and resilient STRIPE habit. Teacher input in these feedback routines will be given if, and when, needed to support and personalise the student review process.

Low stakes quizzes and retrieval practice will be used regularly to provide students with self-assessment opportunities.

Pre-topic tests will be carried out using online, multiple choice questions to highlight any areas of improvement before the topic begins to inform teacher planning.

Topic assessments will be carried out at the end of each topic. These will be short 15-20 minutes paper-based quizzes containing questions from each of the BASE levels. The aim of these assessments is to determine the understanding of a topic at the point of study.

End of unit assessments will be used one and a half terms to assess the retention of a mixture of topics after a period of 'forgetting'. This method determines whether the content has been truly assigned to long term memory rather than just understanding and the time of study.

### Extended Learning:

Extended learning in Maths will take two forms: retrieval via online platforms and open-ended tasks based upon the driving question for that term. The online extended learning will be set once a week and there is an expectation that even though it is computer-based, a clear record of methods is recorded in the exercise book. Open-ended tasks investigating the mathematical contribution to the driving question will be set over a longer period of time, normally two weeks.

### Connection to the JTFS Approach

Whole School Theme	How does <i>Maths</i> support this?
STRIPE	STRIPE habits that produce the most effective and efficient mathematics will be highlighted. Reflective review tickets will be used to promote understanding of the students' pathway through the topic. Following each unit assessment there will be a review to measure the impact of STRIPE during preparation
STEAM	In class discussions to show how mathematical topics can be applied in job roles in conjunction with other STEAM subjects.
Literacy	Key words will be integrated into every lesson. Student explanations will need to contain subject specific vocabulary when presenting their thoughts to promote improved oracy.
Numeracy	'Know your Numeracy' tags will be used across all subjects with a maths emphasis so common teaching methods are used throughout the school.
SMSC, British Values and Citizenship	During "Does money make you rich?" investigations students will apply knowledge to financial situations whilst Body Mass Index will be investigated to answer the question "What keeps me healthy?"