



*Dedicated to delivering inspiration learning experiences.*

## *Subject Philosophy: Maths / Numeracy*

### Intent

Through a variety of creative and practical activities, students will be taught the knowledge, understanding and skills needed to develop and build on their mathematical skills within the several different numeracy strands where they will acquire a broad range of subject knowledge and functional skills. Sometimes, numeracy will be taught cross-curricular e.g. through cooking to demonstrate measuring or counting skills or as part of planning a weekly budget for meals. Sometimes learning will take place outside of the classroom e.g. as part of the Functional Skills curriculum in KS5 where students may have to use their knowledge of money to buy items from a shop and hopefully throughout their time at school, students will develop their numeracy skills and confidence enough to be able to apply these to everyday situations.

Where possible, we draw on real-world experiences to provide an engaging context for developing, enhancing and building on prior knowledge and to create an inspiring curriculum that allows each student to develop and learn on an individual basis. Every student should have the opportunity to make use of their numeracy skills and knowledge and, through this, develop personal achievement. We provide opportunities for students to be creative and solve problems by developing their own solutions to real-world contexts and offer (where possible and applicable) various methods to communicate their ideas and understanding.

Content has been selected for this curriculum that develops and encourages creative thinking, problem-solving and incorporates and utilises skills and knowledge from other subject areas. Whilst other subject areas are intrinsically linked, i.e. PE, cooking, science etc. there is a conscious recognition and understanding that this cannot be a barrier to learning as every pupil is likely to have different experiences and starting points. There is a purposely strong emphasis on encouraging reflection and iteration, with a student-led approach. Rather than a 'designing-by-numbers' approach, students will be encouraged to creatively explore briefs and opportunities.

The suggested curriculum sequence builds through the key stages so that as students move forward in their education, they are equipped with the prior knowledge that they need to succeed in the next phase.

The curriculum has been created so that students with different starting points can access them. Lessons within a unit are sequenced so that each one builds on prior learning. The activities are scaffolded and resources have been provided so all students can succeed, and they provide scope for all to be challenged.

Teachers can add any festivals and cultural events to the plan however it needs to be in synchronisation with the sequence within their delivery and matching the planned sequences.

### Programme of Study

Pathways: The Investigators and The Venturers

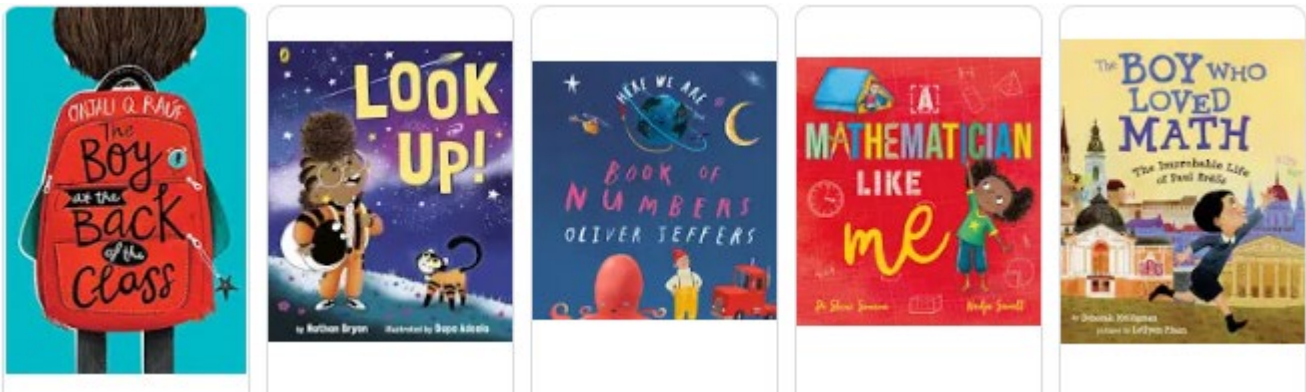
By the end of Key Stage 3, 4 and 5, most students are expected to know how to apply and use many of the key skills taught through the several strands that cover:

- Number & place value
- Number operations
- Statistics
- Properties of shape
- Measurement
- Position and direction

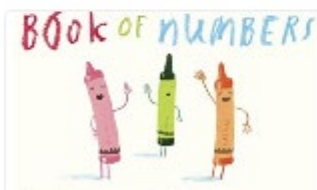
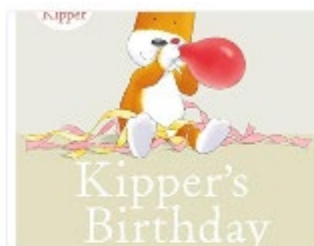
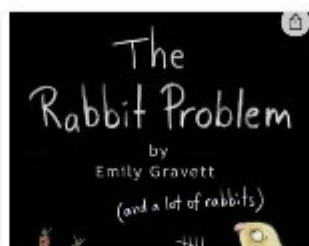
The KS5 curriculum will be more focused on real-life questions and problems to prepare them for the real world as much as we possibly can which includes the opportunity to pass their Travel Training which will see them needing to learn and be confident in how to read and understand a bus timetable and to be confident with money.

## Literacy Opportunities

Students will be encouraged to develop and enhance their literacy skills through being able to read and comprehend worded numeracy questions and problems which could be through the form of reading a maths question or reading a recipe in a magazine and making a list of ingredients needed and / or the method to making it. They might read a set of instructions for a science experiment or have to work as a team to crack a code and solve a mystery in English.



<https://www.kqed.org/mindshift/50593/10-books-to-spark-a-love-of-math-in-kids-of-all-ages>



## Cross-Curricular Opportunities including LotC

- Converting units e.g. pound into pennies, temperatures from Celsius to Fahrenheit
- Changing the quantities of ingredients provided by a recipe and working out cooking times based on weight and developing basic counting skills

- Read a variety of numbers and understanding their context or value e.g. 7 pennies or 7 degrees
- Measuring out quantities and amounts e.g. milliliters, grams
- Learning mathematics vocabulary
- Practice telling the time and reading a timetable
- Learning about dates and timelines in History
- Estimation e.g. how long things might take to bake, how the seasons change
- Learning how to get read information or pick out the key points e.g. a set of instructions, reading a recipe, which will, in turn, help them with word problems in mathematics
- Solve calculations e.g. halving or doubling amounts of ingredients.

## Personal Development

All students will develop their creative, technical and practical expertise needed to perform everyday tasks confidently and will build and apply a repertoire of knowledge, understanding and skills in order to problem-solve.

Students are also using their time management skills to build confidence within their own mathematical abilities, are being independent, are developing practical problem-solving skills and are learning about the application of numeracy in everyday life.

## Student Outcomes

*We will know we are operating successfully when it becomes apparent that most of our students:*

- *Count / Count forwards and backwards and understand more / less*
- *Know how to use the four different functions (add, subtract, multiply and divide)*
- *Understand patterns and sequences*
- *Have an awareness of mathematical vocabulary e.g. can tell the time / identify days of the week / months of the year / different units / money*
- *Have an awareness of shapes*
- *Can read and create data e.g. bar charts*
- *Understand position and direction*
- *Can work both as a team member and as an individual*
- *Know how to seek help to solve the problem in several different ways e.g. "3b4me"*
- *Can read problems and questions*
- *Can understand given problems and questions*
- *Can apply their knowledge and skills to their learning in both their maths lessons and their other lessons too where it is evident that numeracy has been applied and utilised cross-curricular*

## Development Strategies

In order to achieve our goals and bring about these outcomes we will endeavour to:

- Dedicate three periods of maths a week for the Investigators and two for the Venturers
- Practise Pathway teamwork,
- Implement Learning Outside the Classroom where possible,
- Sequence knowledge, understanding and skills to ensure that they are established and sustain growth for each learner,
- Review learning and provide intervention,
- Reflect and review content regularly to meet the needs of our students.