

Spiritual development in Maths

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. Children investigate different number sequences and where they occur in the real world, such as Fibonacci pattern and algebraic formulas. Children begin to develop a fascination for number, in particular missing number problems. Mathematics is about thinking and describing, analysing and creating – it has changed the world. It can stimulate moments of awe and wonder as learners notice a connection or pattern for the first time. It encourages independence and the ability to make decisions based on evidence, reasoning and logic. 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 maths as a tool to explore it more fully.

Moral development in Maths

The moral development of students is an important thread running through the mathematics syllabus. Students are provided with opportunities to use their maths skills in real life contexts, applying and exploring the skills required in solving various problems. For example, students are encouraged to analyse 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.

Within Mathematics children will recognise how logical reasoning can be used to consider the consequences of particular decisions and choices. Children explore a range of Mathematical investigations where they are challenged and made aware that there may be more than one solution. On the other hand, they are also aware that some problems require one correct answer. 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 maths.

Social development in Maths

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 realise their own strengths and feel a sense of achievement which often boosts confidence. Throughout the key stages, children are provided with opportunities to work together productively on mathematical tasks and supported to see that the result is often better than any of them could achieve separately. Experimental and investigation work provides an ideal opportunity for children to work collaboratively. Over time they become more independent and resilient learners.

Cultural development in Maths

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 maths alongside the realisation that many topics we still learn today have travelled across the world and are used internationally. Children recognise that mathematicians from many cultures have contributed to the development of modern day mathematics.