

SMSC

Mathematics

The mathematics department strongly supports the school policy of SMSC development. The teaching of mathematics supports social, moral, spiritual and cultural development in a number of ways:

Through what is taught:

- Relating number work to real life situations
- Understanding early beginnings of various topics, such as number systems and theorems.
- Making sense of the world around us
- Awareness and elimination of stereotypical bias and discrimination in materials
- Enabling students to make their own choices by equipping with the mathematical knowledge to make an educated decision.

Through how it is taught:

- Exploration and investigation
- Enjoyment of success
- Coping with short term failure and showing resilience
- Encouragement of self discipline and accountability
- Problem solving and critical thinking
- A range of learning environments including pair work, group work, individual tasks and team work.
- Encouraging students to listen

Through how staff work as good role models:

- Value the contribution from each student
- Insist that every student is listened to by teachers and peers
- Prepare lessons well to meet the needs of all students
- Create a learning environment that is conducive to high quality teaching and learning
- Praise and encourage each student for what they are doing well
- Welcome visitors into the classroom to give constructive feedback and act upon advice
- Maintain consistency in high expectations of behaviour and work output
- Challenge fairly and concisely any behaviours that do not meet with expectations

Spiritual development in mathematics:

Mathematics appears in life in many different ways. We encourage our students to think deeply about the world around us and like to educate them with a mindset of extending their thirst for knowledge outside discrete mathematics lessons. Allowing students to make these links themselves also promotes a feeling of achievement and passion for the subject.

Moral development in mathematics

Mathematics envelopes plenty of moral concepts. The use of statistics can help develop the understanding of the likeliness of outcomes in situations involving 'gambling', such as the Lotto or bingo. It is important to educate students on how statistics are used in real life to manipulate people into having biased opinions or believing others'. We promote strategies that eliminate bias when conducting questionnaires, also minimising embarrassment or forced answers. We wish to equip the students further and be able to not only distinguish what is right and what is wrong, but also to be able to have faith in justifying their decisions and answers, even when they may differ from those of others. This is often shown through group work involving comparison and reflection of individual work.

Social development in mathematics

Social skills are needed as an integral part of real life. This is promoted within mathematics lessons through team work, pair work and speaking and listening tasks. The students are encouraged to put their opinions across fairly and accurately, also listening and acting upon ideas from others. Examples of the social aspects of mathematics that may be referred to include using the national census data to help us plan for the future and ensuring that there are enough schools/hospitals/houses etc. to provide for everybody. The use of money and the managing of finances are absolutely key in every aspect of life, so the enhancing of numeracy skills is essential in mathematics lessons and across the curriculum.

Cultural development in mathematics

Historical roots of theorems and concepts play a big part in cultural development. Examples include investigating different number/symbol systems such as Roman numerals and the decimal system, as well as methods such as Chinese multiplication. Students will study patterns and shapes from around the world for example Islamic geometric patterns. The use of currency and its value is also a very valuable lesson, therefore students are taught how to exchange money into different currencies and also appreciate basic concepts of economic change within different areas of the world.