

Maths at Litcham School

INTENT

1. To deliver the Maths National Curriculum.
2. To deliver a knowledge-led spiral Maths curriculum, where knowledge and skills are taught and consolidated.
3. To deliver a broad Maths curriculum that includes Number, Algebra, Ratio and Proportion, Geometry, Statistics and Probability that is appropriate for every student.
4. To promote high expectations and aspirations and a secure understanding of mathematical reasoning. Students will be prepared to be mathematically and economically aware after leaving school.
5. To deliver an engaging and enjoyable Maths curriculum that is knowledge rich and allows students to develop the appropriate skills to solve problems logically. It also provides opportunities for enrichment. Students will be well prepared to pursue Mathematics after leaving school.

IMPLEMENTATION

Curriculum Delivery

- Students in Early Years Foundation Stage (EYFS) have experiences with concrete resources as well as pictorial materials such as wood and plasticine to begin their number work
- Students in Year 1 to Year 6 follow the White Rose Scheme of Work using resources from Mastery and Mymaths. Teachers are supported by specialists from the Secondary Maths Department.
- Students in Year 7 to Year 11 are taught from a scheme of work designed to reflect the aims of the National Curriculum differentiated to meet pupil's learning needs and styles. Students have 8 - 11 lessons a fortnight with specialist Maths teachers. Students study topics that cover the main principles of Number, Algebra, Ratio and Proportion, Geometry, Statistics and Probability. These are split into 12 different topics which are taught in a spiral format of 9 – 10 topics per year. This allows students the knowledge necessary to make connections between the topics that forms an essential part of problem solving
- Students have individual logins to the online platforms of Mymaths and Mathswatch which provide clips, lessons and questions to consolidate their learning.
- Students expected to Study Maths at the Higher tier varies year by year and is based upon our assessment during Year 11. Broadly 50%, set 1 and 2, are both aimed at Higher with lower sets focussing on Foundation topics. Students whose target grades are below a pass at GCSE (8 - 10% approximately) are given the opportunity to sit Entry Level Qualifications.

Teaching and Learning (including pedagogical approach and research)

The teachers in EYFS follow the interests of the children and so the topics covered vary each year. In Autumn 2019, the topics were 'Nursery rhymes', 'Ourselves', 'Dinosaurs' and 'Christmas'. Maths lessons fit into topic work.

Students in Year 1-6 have timetabled Maths lessons either taught by their normal classroom teacher or by a subject specialist individually or in a Team teaching format from the secondary phase.

Teachers plan each lesson to suit their own class based on objectives from the White Rose Scheme. Lessons include the use of Concrete, Representational to Abstract resources, Bar Modelling. Mastery is the pedagogical approach used at the Primary Phase and is designed to deepen understanding and problem solving ability, rather than creating a reliance of following a process.

Mastery continues to underpin the teaching of Maths in the Secondary Phase, with continued reliance on the CRA approach. Also featured heavily in our lesson planning is an awareness of metacognitive strategies to avoid cognitive overload. To do this, lessons will often recap on key processes used in the first stages of solving a problem. For example, being able to find the Lowest Common multiple before being able to add a set of fractions with different denominators.

Lesson studies are currently focussing on the processes essential for full and complete exam answers that show reasoning and evidence.

Students in Year 7 continue to be taught in Mixed Ability groups before being streamed in Year 8. The CRA approach is of continued benefit to all abilities. Linear sets are used from Year 9 onwards.

Extra-Curricular

The Maths department plan a number of enrichment opportunities for the academic year including a trip to Thetford Forest to study "Treegonometry" amongst other things, participation in the 'UKMT Maths Challenges' and "Maths Fest" as well as a number of activities at both the primary and secondary phase to celebrate the joy of Maths.

IMPACT

Teachers use every opportunity to provide formative feedback, verbally or in written form.

Summative assessments at the Primary Phase are written and delivered in line with the White Rose Scheme of learning. At Secondary Phase, they are given at the end of each topic as well as termly using the AQA KS3 tests or Exam papers at KS4.

To prepare for this, students have a revision lessons where they will consolidate their learning using mindmaps and quizzes, targeted homework tasks are also set which mirror the topics in the test. This is thought to 'Lower the Threat' of the test while maintaining 'High Challenge'. The marks for each class are recorded in a centralised spreadsheet and progress is monitored by the class teacher and Head of Department.

Students are expected to analyse their tests and identify their areas of weakness. These are recorded on Key Objective sheets. Strategies for students at risk of underachieving include additional work for improvement set by class teachers, additional questioning in lessons, a move in the seating plan or more scaffolding. Parental contact home is made through phone calls and also postcards are sent home for example for an improvement in an assessment. Assessment for learning is embedded in Maths lessons and can take the form of 10 Quick Questions, hinge point questioning and other formative assessments.

Ultimately the outcomes at GCSE have traditionally been very strong in our department.