

MATHEMATICS POLICY

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Treloweth School aims to provide pupils with a mathematics curriculum and high-quality teaching to produce individuals who are "numerate, creative, independent, inquisitive, enquiring and confident".

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions
- confidence to approach challenges and broaden their own understanding through a learner led, independent approach.

Guidelines

Treloweth School believes that mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Equal opportunities

Teachers ensure that all pupils have equal access to the full mathematics curriculum.

THE NATIONAL CURRICULUM

Knowledge, Skills and Understanding

At KS1 and KS2 teachers we use the National Curriculum for Mathematics (2014) as the basis of our mathematics teaching to ensure complete coverage of all aspects of mathematics. To supplement this further, we use our agreed approach to calculations document which guides our children through the four operations from EYFS to Y6. This immersion in mathematics from EYFS ensures that from an early age, children become competent in mathematics, fostering their ability to:

- secure number facts, such as number bonds, multiplication tables, doubles and halves
- calculate accurately and efficiently, both mentally and in writing
- draw on a range of calculation strategies
- make sense of number problems, including non-routine 'real' problems
- develop spatial awareness and an understanding of geometry, statistics and measure.

Breadth of Study

Breadth of learning is fundamental to our mathematics teaching and children need to explore mathematical challenges through a range of experiences and visual prompts. Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving across the curriculum

- individual, group and whole class discussions and activities
- open and closed tasks, providing opportunity to investigate mathematical concepts
- exploring a range of methods of calculating promoting a breadth of learning
- working with computers as a mathematical tool, to support conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.

CROSS-CURRICULAR LINKS

Throughout the whole curriculum opportunities are planned to teach, extend and promote mathematics. Teachers seek to take advantage of all opportunities through cross curricular mathematical challenges. Teachers ensure that pupils are taught programmes of study in geometry, statistics and measure within a broader, cross curricular approach.

TEACHERS' PLANNING AND ORGANISATION

The approach to the teaching of mathematics within Treloweth School is based on five key principles:

- ❖ a daily mathematics lesson to focus on place value, number and calculations
- ❖ 1- 2 hours a week of cross curricular teaching of statistics, geometry and measure
- ❖ a clear focus on direct, instructional teaching and interactive oral work with the whole class and groups
- ❖ an emphasis on mental calculation, using and applying and breadth of learning
- ❖ developing a mastery led teaching approach, whereby all children have access to and experience of, first quality teaching of their year group's learning intentions.

Teachers use 'Broadbent mathematics' as a planning framework and the 'small steps of progression' to ensure development of children's learning takes place over time. Lessons are planned using a common planning format (Appendix 1) and planning scrutiny is carried out termly by the mathematics coordinator.

Teachers in EYFS classes base their teaching on objectives in the 'Curriculum Guidance for the Foundation Stage;' this ensures that they are working towards the 'Early Learning Goals for Mathematics'. The children are given access to daily mathematical challenges through continuous provision and in addition, participate in adult led mathematics sessions in preparation for Year One.

SEND

Pupils with special educational needs may receive additional support through:

- Targets and programmes set in Individual Learning Plans (ILPs);
- Additional teaching time both in and outside the classroom;
- Specialised resources and materials;
- Carefully targeted and planned interventions- 'Closing the Gap with Numicon' (EYFS and Y1) and 'Counting to Calculate' (Y2 and KS2)
- Additional practice provided by non-teaching assistants or volunteers.

ASSESSMENT AND RECORD KEEPING

Using the 2014 curriculum materials, teachers are expected to make regular assessments of each child's progress and to record these systematically. The data should then be used to inform planning and identify and address any misconceptions. Assessment in mathematics is formative and summative and allows the mathematics coordinator to track each child's learning journey termly, throughout their time at Treloweth School.

Formative assessment

Teachers use children's mathematics books to assess children's learning daily and to ensure mastery of the curriculum is achieved by all. Post Teach is planned for children who need to spend more time on a concept to master it efficiently and this is evident in children's books. Rather than children being exposed to pages and pages of calculations, teachers are encouraged to develop their children's understanding of the breadth and depth of a particular concept, for example using empty box calculations and looking at number patterns in a variety of ways.

Summative assessment

At the end of each term tests are administered to determine the mathematical level of each child. This data is recorded on Target Tracker by the class teacher and analysed by the mathematics coordinator to ensure that the progression of each child is rapid and that the expected progress (see assessment policy) is being met in each cohort. Rising Stars assessments are given to support Teacher's assessment of each child in relation to each learning intention, and this, combined with knowledge of the child and book evidence, supports our triangulated approach to assessment. Children carry out national end of key stage assessments in Year 2 and Year 6.

