

Mathematics policy

Stradbroke CE Primary School



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Aims and Vision

Our aims in teaching Maths are to:

- Promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- Develop children's logical thinking and reasoning skills through a natural curiosity and investigative approach
- Use mathematical vocabulary confidently and competently for children to express their thoughts, findings and justifications
- Develop a thorough knowledge and understanding of number and the number system, including application to calculations
- Develop the ability to solve problems through reasoning, decision-making and justifying
- Explore features of geometry and develop measuring skills
- Develop a practical understanding of statistics, including how data can be collected, analysed and presented
- Make comparisons and explain the thought behind these using mathematical vocabulary
- Understand the importance of mathematical skills in everyday life

The Teaching of Maths

The structure of Maths teaching is based upon the Maths National Curriculum guidelines and covers all of the recommended objectives. To ensure that adequate time is given for developing Maths skills, each class has a dedicated Maths lesson each day, lasting approximately 60 minutes.

Calculation Policy

Our Calculation Policy is intended to ensure consistency and progression of children's learning throughout the school, linked to addition, subtraction, multiplication, division and understanding of number. For more detail, please see the separate Calculation Policy.

Spiral Curriculum

Across the school, we teach Maths as part of a spiral curriculum whereby each area (Number and Place Value, Measurement, Geometry and Statistics) is covered multiple times throughout the year to promote recall and application of reasoning skills to solve problems. This is intended to provide opportunities for deeper learning and understanding. Please see separate Maths Curriculum Objectives for an in-depth study of the objectives across each year group to see the development and progression of learning.

Teaching and Learning

Teaching styles are aimed to promote children's love of learning and developing confidence throughout the children's understanding of maths. Children can be taught as a whole class, mixed-ability and ability-differentiated groups as well as independent learning and paired or grouped activities. This is intended to support and challenge the children's learning and promote Maths talk and discussion to deepen their understanding by consolidation. Staff are kept up to date on developments in Maths teaching through staff meetings, updates and

informal conversations on a regular basis. There are opportunities for CPD to continue staff development in Maths and ensure continuity throughout the school.

Questioning

Throughout the school, questioning techniques are used to assess the children's understanding, as well as promoting deeper thinking skills. The children are encouraged to ask questions as well as answering them, including answering each other's questions or developing another child's answers further.

Next Steps

Next steps are a tool used to show progression and development in learning by applying understanding to a different context or explaining and justifying the children's own thoughts. They are used to show clear targets each week in order to progress learning.

Concrete, Pictorial, Abstract

Throughout the school, we adopt the Concrete, Pictorial, Abstract approach whereby the children are encouraged to use manipulatives to grasp a concept, then gradually moving towards a pictorial representation, and finally applying their understanding to a more abstract model. We believe that using manipulatives all the way through to and including Upper KS2 encourages a deeper understanding of concrete resources and their possible representations, including using as a tool to support problem-solving and developing discussion using mathematical vocabulary. As part of the pictorial approach, we have introduced the bar model as a visual tool for children to apply to any area of Maths to support understanding and learning. This enables the children to be more independent in their problem-solving by teaching them a strategy that they can use to break problems down into more manageable chunks and then solve.

Differentiation

Provision is made for the full range of abilities:

- By recognising that some children may need specific support with Maths skills (e.g. if they show dyscalculia tendencies), although they may have other strengths within the subject.
- By giving extra support and interventions to children who need extra help or opportunities for reinforcement of their learning.
- By ensuring that pupils of a high ability or who show a flair or passion for Maths are challenged appropriately, for example by being given opportunities to complete more extended, open-ended tasks, working alongside other children who will challenge and stretch them in their learning or applying their understanding to reasoning questions and problem-solving activities.
- Provision for Pupil Premium children is tailored to their individual needs.
- Teachers and Teaching Assistants may work with specific children or groups to ensure their understanding and to provide tailored support in their learning.

- Resources may be used to provide differentiation by offering different representations or manipulatives and using them in a variety of ways (eg. multilink cubes, Dienes/base ten, Numicon, counters, place value grids, etc.).
- Homework activities can also be differentiated using an online system (MyMaths) in order to promote engagement and consolidate learning.

Maths Assessment

Formative assessment occurs throughout every lesson through observation, discussion, opportunities for live marking and evaluation of the children's work. This is invaluable in enabling the teacher to check children's understanding as well as informing future planning so that teaching and learning is most effective.

More formal records for each pupil will consist of:

- Maths books which are used alongside the Not As We Know It assessment objectives (our chosen assessment without levels approach).
- Pupils' work is moderated within the school regularly and between schools within our Federation and MAT.
- Children are given weekly next steps to set clear targets for their learning.
- Children in Years 1, 3, 4 and 5 complete NFER assessments.
- Regular teacher assessments are made in Maths and the data is analysed (using Pupil Asset) and shared regularly to inform future planning.
- Pupils on the SEN register are monitored closely. Progress towards their targets on IEPs are analysed by teachers and the SENCo.

Cross-Curricular Links

Cross-Curricular links are made where appropriate in order to promote understanding of Maths in different contexts and application in the real world.

- Science lends itself particularly well to statistics in terms of collecting, analysing and presenting scientific measurements as data. Children can also use a wide range of scientific equipment to measure accurately.
- Maths often requires the children to read and interpret problems or questions, making links to English and reading skills. Children develop their interpretation skills in order to break down a problem and solve it in logical steps.
- There are links between Maths and Personal, Social and Health Education (PSHE) in terms of encouraging the children to work independently and develop their own confidence, as well as working together, listening and accepting different methods and ways of working. Links are also made to maths used in real life (money, measures, mental maths, rounding and estimating, etc).
- Linking to Spiritual, Moral, Social and Cultural Development, we encourage the social development of children through our high expectations when they work with other children, including their discussions and justifications with each other. Maths is also taught across different cultures, including number systems using by the Romans and Egyptians.

The Role of the Headteacher

In consultation with the Maths Subject leader, the Headteacher:

- Determines the ways that Maths should develop, enhance and extend the curriculum.
- Decides the provision, budget and allocation of mathematical resources.

- Decides assessment methods and how records are maintained.
- Ensures that there is a Maths policy and identifies a Maths subject leader.

The Role of the Maths subject leader

The Maths subject leader should:

- Ensure that Maths planning follows the National Curriculum, covering all areas, including Number, Place Value, Measures, Geometry and Statistics.
- Embedding the teaching of Maths across the school and promoting consistency.
- Manage the provision and deployment of resources, giving guidance and support when necessary.
- Inspire colleagues to deliver high quality teaching and learning opportunities.
- Analyse data to identify strengths and weaknesses in outcomes, planning for improvement accordingly.
- Identify areas of Maths which are a priority for the School Improvement Plan and complete action plans as necessary.
- Lead INSET within the school, and investigate suitable CPD opportunities.
- Act as a contact point between the school and support agencies, including the LA.
- Provide mathematical expertise and websites of use.
- Lead the evaluation and review of the school's Maths policy.
- Monitor and review the Maths provision within the school.

Monitoring and Evaluation

The teaching of Maths will be monitored through the School Improvement Plan by the Maths subject leader in the first instance and then by the Senior Leadership Team and the Executive Headteacher. SATs results are analysed and areas for development prioritised. Governors are kept informed via a subject report as scheduled in the Monitoring and Evaluation programme. The Governors assigned to monitoring Maths will be kept up to date regarding developments, progress and changes within the subject.

Written and approved: Autumn 2019