Brunshaw Primary School

'Inspiring children to be resilient and aspirational learners, within a positive and considerate community.'

Mathematics Policy

March 2024

Agreed by Governors: 22/02/24

This policy outlines the guiding principles by which Brunshaw Primary School. We follow the National Curriculum for Mathematics, using Red Rose Maths as a scheme of work.

Aims

We aim to develop and deepen pupil's mathematical knowledge and understanding so they are equipped with the necessary mathematical skills and attributes to be successful in the challenging world around with a specific focus on problem solving skills.

Throughout the pupils' time at Brunshaw and upon leaving, we aim for our pupils to:

- Have a positive attitude towards mathematics and recognise that being challenged in maths facilitates a greater and deeper understanding of mathematical concepts.
- Have competence and confidence in their application of mathematical knowledge, concepts and skills.
- Be able to approach and solve problems by thinking systematically and logically.
- Develop a range of effective and efficient mental calculation strategies for all four operations.
- Know when, why and how to use effective written methods for all four operations.
- Question and reason mathematically in order to challenge and develop their thinking.
- Understand how mathematics is used in the wider world and recognise its significance within industry as well as everyday life.
- Show initiative and an ability to work both independently and in cooperation with others.
- Have an understanding of mathematics through a process of enquiry, trial and error and experiment.

In the Early Years Foundation Stage children are taught towards the Early Learning Goals (ELG). These are ELG for Number and ELG for Number patterns. Children are taught through teacher directed and child led tasks. There will be opportunities to use a wide range of manipulatives to develop a secure base of knowledge and vocabulary from which mastery mathematics is built.

Concrete Pictorial Abstract (CPA) Approach

Ensuring that children become competent in fluency; moving on to reasoning and problem solving, pupils learn new concepts initially using concrete examples, such as counters, then progress to drawing pictorial representations before finally using more abstract symbols, such as the equals sign.

Variation

The questions and examples are carefully varied by expert authors to encourage pupils to think about the maths. This ensures that pupils become highly fluent in areas of mathematics, ensuring that they can adapt their strategies to solve a variety of problems.

Differentiated Activities

Tasks and activities are designed to be easy for pupils to enter while still containing challenging components through guided tasks. For advanced learners, challenge is set through open-ended problems known as deeper learning and independent tasks ensuring that these pupils reason mathematically and build on their prior knowledge. All pupils are set work that is aspirational and challenging.

Problem Solving

'The importance of problem-solving in learning mathematics comes from the belief that mathematics is primarily about reasoning, not memorization. Problem-solving allows students to develop understanding and explain the processes used to arrive at solutions, rather than remembering and applying a set of procedures.' (Klerlein & Hervey)

Problem solving is used in order to develop pupils' higher-level thinking. This ensures that all children have regular opportunities to deepen their learning and understanding. Problem solving is applied at different stages, ensuring that pupils are competent in fluency prior to solving a variety of problems.

Recap Starters

In years 1 – 6, pupils have daily starters which recap key skills. Alongside this, pupils' areas to develop are rigorously identified by class teachers, and from this constant recapping of skills (through a spiral curriculum approach), children can become proficient mathematicians.

Maths Across the Curriculum

In addition to daily maths lessons, teachers will make every effort to provide opportunities to apply pupils' maths skills across the Wider Curriculum. These opportunities will provide a meaningful context to apply maths skills and allow children to make links between their learning. An example of this includes graphs and charts in science.

Marking

See Feedback and Marking Policy

Assessment

On-going assessments of every child are recorded and are is discussed during regular pupil progress meetings with members of the SLT. In addition to teacher assessment, teachers use a range of assessment materials, learning checks at the end of each half term and Red Rose Maths assessments at the end of each term to help further validate their teacher assessments.

Equal Opportunities

Mathematics is taught within the guidelines of the school's equal opportunities policy.

- We ensure that all our children have the opportunity to gain maths knowledge and understanding regardless of gender, race, class, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, linguistic or gender bias.
- We aim to teach maths in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds.
- We draw examples from other cultures, recognising that simple technology may be superior to complex solutions.
- We value maths as a vehicle for the development of language skills, and we encourage our children to talk constructively and with mathematical reasoning about their maths knowledge and understanding.
- We recognise the particular importance of mathematical progression for all in terms of the concrete – pictorial- written approach to the teaching and learning of new maths concepts.
- We recognise that maths may strongly engage the more able child, and we aim to challenge and broaden their understanding of maths through the application of an ever widening variety of contextualised teaching and learning activities. We develop this by asking and encouraging challenging questions.

Reporting

Children's progress is reported to parents and carers through either written reports (Summer Term) or Parent's Evenings (autumn and spring terms). If at any time teachers or parents wish to discuss an individual child's progress a meeting will be requested and actions in terms of early interventions will be discussed and agreed.

The Learning Environment

All classrooms will have a mathematics working wall. These display boards will include some or all of the following

- teacher annotations
- pictorial/concrete representations
- key/new vocab
- examples of teacher modelling
- success criteria
- learning objective
- examples of pupil work including written explanations to teacher questioning or tasks
- images linking to current learning e.g. examples of negative numbers in context (Lift to below ground levels, thermometer reading)

In addition to the working wall, all classrooms must ensure children have independent access to the following equipment (kit boxes):

- Times table squares
- Hundred squares
- Number Line (age appropriate)
- Base Ten (and/or other age appropriate concrete counting/Place value resources e.g. digit cards, straw bundles, PV sliders)
- Place value charts

Reviewed: March 2024
Next Review: March 2026