Burradon Community Primary School

Mathematics Policy

March 2025
R Watts

Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Burradon Community Primary school. The school's policy for mathematics is based on the National Curriculum 2014 Mathematics. The foundation stage curriculum follows the EYFS document. This policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body.

Maths at Burradon Community Primary School has been built on one of our core values:

'Persevere and be resilient – be the best you can.'

Our Vision for Maths:

"At Burradon, all children will have a positive attitude towards mathematics, becoming fluent, confident and resilient mathematicians, who are equipped with the skills to succeed in, and beyond, their school years."

Intent

The intent of our mathematics curriculum is to provide learning which is accessible to all and will maximise the development of every child's academic achievement. It is important that our children enjoy learning about mathematics and experience success in the subject; are curious about maths in school and the world around them; and recognise the importance of the development of their maths skills to their participation in wider society.

Our Key Principles:

- We believe maths is a subject that all children can do.
- We believe that maths should be fun, engaging and rewarding for all learners.
- We embed fluency, reasoning and problem solving at the heart of our curriculum.
- We strive for all children to become competent mathematical thinkers, confident in making connections.
- We support children in their understanding through a variety of representations, including concrete, pictorial and abstract.

Implementation

Maths lessons are taught based on the mastery approach. Long-term planning is intentionally mapped out based on the needs of the pupils in to ensure coverage and progression of skills. All units in Autumn begin by developing key Place Value concepts and units are carefully sequenced to allow children to make connections and links. Topics are taught in extended blocks to support mastery of concepts, which are carefully sequenced to ensure the retention and deepening of skills and knowledge. When planning units of work, teachers break down key concepts into small steps of learning ensure all pupils are progressing through the unit together at roughly the

same pace. Children who rapidly grasp concepts are then offered more complex and sophisticated questions and problems.

Lessons are designed using a range of carefully chosen resources, data and suggestions from reliable sources such as NCETM and nrich.co.uk. Lessons involve the concrete, pictorial, abstract (CPA) approach to develop a secure understanding of mathematics principles. Lessons begin with a recap which warm up knowledge to allow children to progress to new knowledge in the lessons but at other times, a recap is recalling and deepening knowledge from previous units of work.

When planning for maths, teachers take the following mastery strategies into account:

- The five big ideas of coherence, variation, representation and structure, mathematical thinking and fluency;
- Small steps;
- Regular opportunities for mathematical talk, using accurate mathematical vocabulary and stem sentences;
- Implementing the concrete, pictorial, abstract (CPA) approach to develop a secure understanding of mathematical principles and ideas;
- Applying/using the bar model approach as a strategy to tackle calculation/ problems;
- Considering key questions and precise mathematical vocabulary at the point of planning;
- Providing multiple opportunities for verbal and written/ drawn reasoning within a unit;
- Including rich problem-solving opportunities, where children are expected to draw on and apply multiple concepts;
- Modelling of skills and approaches, including reasoning;
- Modelling and sharing of efficient and accurate application of methods;
- Opportunities to explore maths concepts at a deeper level;
- Inclusion of all learners, providing relevant support to allow the vast majority of learners to access the year group objectives;
- Modelling using 'I do, We do, You do' for guided practice;
- Worked examples.

Foundation Stage

Maths lessons in Foundation Stage are taught based on the mastery approach. In FS2, in line with KS1 and KS2, long-term planning is mapped out by delivering Mastering Number sessions to ensure coverage and progression of skills. This includes, daily maths and mental maths sessions, that focus on 4 days of number, In addition, we also focus on shape, space and measures. In FS1, daily mental maths sessions are delivered relating to number, using the NCETM 'Numberblocks' materials, and a weekly session on shape, space and measures. Both schemes are used in line with the statutory EYFS document. Assessment is carried out using the Early Years outcomes.

Implementation – Teaching and Learning

Children's chances of success in mathematics are maximised if they develop deep and lasting understanding of mathematical procedures and concepts.

The emphasis in the daily maths lessons at Burradon is to engage all pupils, encouraging them to explore, discuss and enjoy mathematics. All lessons should involve elements of:

- Instruction – giving information and structuring it well
- Demonstration and modelling – showing, describing and modelling mathematics using appropriate resources and visual displays
- Explanation and illustration – giving accurate and well-paced explanations
- Questioning and discussion
- Consolidation
- Reflection and evaluation, including identification of mistakes as positive teaching points
- Summary – reviewing the maths that has been taught, enabling pupils to focus on next steps.

Mental Maths

From Year 1 to Year 6, pupils engage in daily mental maths sessions, which are planned carefully to promote fluency in mental methods and support children to work efficiently, flexibly and accurately. These sessions are also used to support retention of key calculation strategies and key vocabulary.

This is through the Mastering Number Programme and Number Talks. This project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Number Talks in KS2 is a strategy to build flexibility, accuracy and efficiency in mathematical thinking through the discussion and sharing of mental math strategies. It is a short daily routine that allows pupils to contribute to meaningful dialogue concentrating on how to answer numeracy problems.

Three times a week, Year groups 1 -6 have a specific times table focus which includes teaching new tables and revisiting previously taught tables.

Working Walls

All classrooms have a maths working wall, which acts to reinforce and consolidate children's knowledge and understanding, supporting independent learning. These should reflect the current area of learning, showing the children's learning journey by displaying methods (including how manipulatives/ the CPA approach can be used where possible), key vocabulary and stem sentences, which have been taught individually and progressively in order to support children to master an overall concept. Teachers may choose to display other supportive material on their working wall, including but not limited to mathematical resources (100 squares, number lines, place value charts etc.), children's work, photographs of learning activities, challenge activities and focus areas.

Stem Sentences and Precise Mathematical Vocabulary

The quality of children's mathematical reasoning and conceptual understanding is significantly enhanced if they are consistently expected to use correct mathematical terminology and to explain their mathematical thinking in complete sentences. Teachers provide stem sentences for children

to communicate their ideas with mathematical precision and clarity. These are introduced using the 'I say, you say, we all say' approach: having modelled the sentence, the teacher then asks individual children to repeat, before asking the whole class to chorus chant the sentence. These sentences are planned by teachers to express key conceptual ideas or generalities, providing a framework to embed conceptual knowledge and understanding. These may take the form of generalised statements, or sentences with missing parts which vary according to the example.

Adapting

At Burradon Community Primary School, all children matter and are given every opportunity to achieve their best. Our aim for maths learning is that the large majority of pupils will move through the programmes of study at broadly the same pace. In all classes there are children of differing ability. We recognise this fact and aim to include all children in the daily maths lesson by ensuring they receive sufficient support to master the material covered. Equally, we aim to support children who grasp concepts more rapidly to develop a greater depth of mathematical understanding. This can be achieved through:

- Careful lesson design, ensuring stretch for high attainers and scaffolding for those who need it
- Small steps to ensure a journey culminating in deep understanding of a concept
- Task design – use of concrete, pictorial and abstract materials in tandem to help all learners access a topic
- Regular opportunities for practice and consolidation through well-designed variation
- Using low threshold, high ceiling tasks and creating a low threshold, high ceiling classroom environment
- Adult/ peer support
- Provision of rich and sophisticated problems for children who grasp concepts rapidly, **not** acceleration through new content
- Ensuring sufficient fluency and security of all pupils' understanding with earlier material before progression
- Use of precise questioning to check conceptual and procedural knowledge, using assessment tools to identify who requires intervention so that all children keep up
- Ensuring that any pupils having more difficulty in grasping any particular aspect of curriculum content are identified rapidly and provided with extra support, ideally on the same day, to help them master that content before moving on to new material.

Pupils with Special Educational Needs who have severe or complex difficulties in maths will need support and individualised programmes and may be withdrawn from all or part of the lesson to be taught at their own level. Work in maths takes into account the targets set for children in their Individual Support Plans, Educational Health Care Plans (EHCP) and any recommendations from outside agencies.

Adaptive Teaching in Mathematics

Pre-unit assessment/analysis to identify gaps prior to unit beginning

Identify the key piece of learning and plan small steps to achieve this

Tells us what to assess

Before teaching

Anticipate Barriers	Plan to address them
• Vocabulary • Basic skills • Limited working memory/processing time • EAL • Common misconceptions	• Pre-teach (in some year groups) • Chunking lessons • Retrieval practice • Sentence stems • Thinking/wait time • Plan to scaffold (worked example, images to support vocabulary, word banks) • Prepare a model to share (visualiser/webcam) • Plan targeted support from a TA • Peer support • Maths working wall • Images/prompts/scaffolds in books (pupils prompted to use as a reminder/learning tool) • Position of pupils on carpet • Manipulatives • Slides and resources simples and uncluttered • Fiddle toys

Use assessment to elicit evidence of learning

- Questioning
- Quizzes
- Talk activities
- Whiteboards

Assessment information informs subsequent planning and in -the -moment adaptations.

During teaching

Examples of 'in-the-moment' adaptations	
• Adjust the level of challenge • Change/simplify language • Clarify a task or add more steps • Re-explain or explain in a different way	• Allocate temporary groupings • Extra examples – extra guided practice • Provide a clue/prompt/model • Use peer support • Draw or build using manipulatives • Opportunities to engage in more practice/overlearn

Post-unit assessment - Identify gaps/misconceptions for individuals/groups. Analysis completed with 'as a result of….'details to address gaps moving forward.

Resources

Each class is resourced with a range of manipulatives to support the mastery approach to learning. Children are taught using the concrete, pictorial, abstract approach; where possible, **all** children access concrete and pictorial resources to develop a secure understanding of mathematical principles and ideas. These resources are available for children to use until they feel ready to move to a fully abstract approach.

Other large equipment such as scales and measuring jugs can be found in the resource room (upstairs) and the shed. The outdoor areas are also used to support mathematics and a range of activities are planned there across the school during lessons and playtimes.

Times Tables Rockstars

TT Rockstars has been purchased to support times table recall and is used from Year 2 onwards. This may form part of mental maths, the daily maths lesson or be used for homework. It is expected that children will be fluent in their times tables by the end of Year 4 in preparation for the multiplication tables check; the programme is then used as a retention or catch-up tool in UKS2.

Homework

Homework is given once a week and should provide opportunities for children to practise and consolidate their skills and knowledge. Where applicable, homework is shared on the school website or on SeeSaw.

Maths across the curriculum

Explicit links to maths are created in science and foundation subjects. Where appropriate, the skills that children develop in maths are linked and applied across the wider curriculum.

Assessment

Insight Tracker is used is used to assess maths and continuously assess each child's progress. These have been taken from the statutory objectives from the National Curriculum for each year group. Teachers then assess individual children against these objectives to determine whether they are Below, Just Below, On Track or Greater Depth Standard for their age group. It is expected that the majority of children will be secure in their year group's objectives by the end of the academic year. In the EYFS, assessment takes place in accordance with Early Years Profile.

Pre-unit assessments are used to check the previous year's objectives prior to starting a new unit of work. This is to ensure focus areas are addressed before new concepts are taught. Post-unit assessments are then carried out to assess how secure children are in recently taught concepts.

Progress in Understanding Mathematics Assessments (PUMA) are used as a summative termly assessment tool by all year groups (supplemented by Key Stage 1 and Key Stage 2 past SATs papers in Years 2 and 6). Teachers use the assessments alongside Insight Tracker to inform their termly teacher assessment, and to inform subsequent teaching and learning.

Formative assessment takes place as an informal part of every lesson and is used to inform subsequent teaching and learning. We use assessment for learning to determine whether children require further consolidation through guided or independent practice, following the 'keep up, not catch up' principle. Marking is completed in line with the school marking policy (please see). Where possible, verbal feedback is provided to children within the lesson, or on the same day, to address any misconceptions in a timely manner. Through written marking, children are encouraged to become maths detectives, enabling deeper learning through ensuring they revisit their work, e.g. *One of the angles you have calculated is incorrect. Can you find it and correct it?* Where possible, children should be involved in self-assessment, which may include drawing faces, thumbs up/down, writing a comment or ticking their own success criteria.

Monitoring

The monitoring of children's attainment and achievement in maths and of the quality of teaching and learning is the responsibility of the maths subject leader. The teaching and learning of maths is monitored throughout the year; it is carefully evaluated to support a high quality of maths teaching and learning, ensure consistency across school and identify actions for development. This process is reflected in the subject leader's action plan and is achieved through:

- Scrutiny of planning
- Scrutiny of children's work
- Learning walks, including scrutiny of maths environment
- Observation of lessons
- Pupil Interviews
- Staff interviews
- Feedback from parents and carers
- Collation and analysis of assessment data, both from statutory assessments and the school's assessment system
- Moderation of children's work

Parental Involvement

We aim for parents to be actively involved in their children's learning through homework, knowledge of learning objectives and helping children achieve their best. Useful websites for mathematics are provided on the school website, alongside curriculum matrices for each year group which detail areas of learning for the half term/ term. Parents can view children's learning and the calculation policy for mathematics on the school website in the curriculum section. In addition, parents are invited to parent workshops in EYFS, KS1 and KS2. Parents can view maths work that children complete on SeeSaw, Twitter and Facebook which should be updated regularly by teachers.

Computing

Technology is used in various ways to promote and enhance the teaching of mathematics. Interactive teaching programmes and websites are used by teachers to support learning. Children also use individual PCs and iPads in

the ICT suite or classrooms to work on activities at their own level. The school website can be accessed by children at home; teachers can provide websites linked to the work children have been doing at school to consolidate and extend learning. Maths work and achievements can be shared on SeeSaw, Twitter or Facebook (in accordance with parental consent) by teachers to communicate regularly with parents about achievement in maths and to celebrate success.

Role of the co-ordinator

The mathematics co-ordinator is responsible for:

- The mathematics action plan and developing teaching and learning of maths across school
- Overseeing target setting
- Monitoring standards and consistency in mathematics across the school
- Auditing and ordering resources
- Attending mathematics courses and keeping abreast of developments in current mathematics research
- Leading staff meetings and INSET days, keeping staff informed of new developments and disseminating knowledge and materials
- Supporting staff and being a role model in the demonstration of good practice, identifying and recommending appropriate CPD for teachers where necessary
- Keeping maths policies and documentation up to date and ensuring all staff have a copy

Governing Body

Mr Damian Ramsey is the identified governor for mathematics. The mathematics governor visits the school termly to talk with the subject co-ordinator and when possible, observe mathematics lessons. The mathematics governor reports back to the curriculum committee on a regular basis.

Equal Opportunities

Each child is valued, respected and challenged regardless of ability, race, gender, religion, social background, culture or disability in all maths activities at Burradon Community Primary School.

Review

This policy will be reviewed every 3 years

Miss R Watts
March 2025

In accordance with GDPR 2018 (Data protection) please refer to the policy on our school website using the following hyperlink for information on how we collect, control, process and protect data.

Please note: we share some data with the Local Authority, DfE and outside agencies as defined by our policies.

http://www.burradoncommunityprimaryschool.co.uk/data-protection-gdpr/