Mathematics Curriculum Policy

September 2025 Review Term: Summer 2026

Introduction:

All pupils should become fluent in the fundamentals of mathematics, including through varied and frequent practice, so that pupils develop conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems. (National Curriculum, 2014)

At Burnside, pupils receive a high-quality mathematical education which equips children with a powerful set of tools that they can use in everyday life in order to understand the world. Our pupils are involved in a wide range of teaching for mastery activities which develops a sense of excitement and curiosity about the subject and overall, helps them to be fluent, confident mathematicians. Through meticulous curriculum mapping and lesson design, we ensure that the statutory requirements of the National Curriculum 2014 are met alongside its aims:

- 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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Aims:

Our pupils learn to:

- develop a positive attitude to maths as an interesting and attractive subject in which all children are able to gain confidence, success and pleasure;
- develop a strong, mathematical understanding through an appropriate and progressive learning journey;
- use maths in practical and real-life problems in order to effectively problem solve within school and, subsequently, adult life;
- use correct mathematical language and vocabulary so they can express themselves fluently;
- develop mathematical fluency, skills, knowledge and rapid recall of basic number facts;
- develop a range of efficient and appropriate calculation strategies for all four operations;
- be assertive when using written calculation methods for all four operations.

How we teach mathematics at Burnside

Pupils are taught mathematics in a daily maths lesson of 1 hour and additional daily time using Mastering Number and NumberSense Times Tables.

Pupils are involved in a wide range of activities that enable them to learn concepts, solve problems, develop their mental skills and reason mathematically. Through the use of practical equipment, pupils investigate tasks and problem solve, independently, in pairs or in small groups. Pupils build fluency by learning their number combinations, times tables and increase their knowledge and rapid recall of number facts.

Planning Resources

Our curriculum overview informs teachers of their planning sequence and supports mastery lesson design by aligning all teaching resources with National Curriculum objectives. The following resources are used to map units and plan a sequence of small-step lessons:

- National Curriculum objectives;
- White Rose Schemes of Learning.
- NCETM Ready-to-Progress criteria;
- NCETM teaching spines;

Teaching for mastery

Our curriculum overview is based on the National Curriculum objectives. Through teaching for mastery, pupils deepen their understanding of mathematics, rather than memorising key procedures or resorting to rote learning. The three key principles of mastery are:

- conceptual understanding is key;
- children must be able to speak in full sentences applying correct mathematical vocabulary;
- children can learn to think like mathematicians.

Our curriculum moves at a pace that provides pupils opportunities to ‘master’ skills and understanding before applying them in other contexts.

Concrete – Pictorial – Abstract (CPA)

One aspect of ‘Maths Mastery’ is the Concrete – Pictorial – Abstract (CPA) approach. This is implemented from Reception to Year 6. We use concrete and pictorial representations of number before moving on to the abstract. Building these steps across a lesson helps pupils better understand the value of digits and the relationship between numbers and the real word. The three stages of the CPA approach help secure pupils’ understanding of the mathematical concept they are learning in order to effectively develop strong, confident mental strategies.

Daily mathematics lessons

Daily mathematics lessons are planned and taught using our curriculum overview. Lessons can vary in structure depending on the topic being covered and the needs of the pupils. Small-step teaching takes place to ensure that all pupils understand key concepts before they are exposed to new ones. Focus is given to fluency before developing reasoning and problem solving. All key prior knowledge is revisited where appropriate and it is expected that all pupils have the

opportunity to apply their understanding of a topic as a result of their exposure to rich and deep mathematical problems.

Key Features of Burnside's approach to Mastery include:

- **Curriculum design** - A detailed, structured curriculum is mapped out across all phases, ensuring continuity and supporting transition.
- **Teaching resources** - A coherent programme of high-quality curriculum materials from the NCETM and White Rose Mathematics is used to support classroom teaching and intervention.
- **Teaching methods** - Pupils work on the same tasks and engage in common discussions. Concepts are often explored together to make mathematical relationships explicit and strengthen pupils' understanding of mathematical connectivity.
- **Vocabulary** – In-depth teaching of vocabulary throughout a learning journey by creating actions, associating symbols and relevant images and recording key definitions. Relevant vocabulary is displayed in all classrooms and referred to throughout lessons.
- **Stem Sentencing** - Used to tackle misconceptions and improve reasoning through talk for learning whilst exposing generalisations within mathematical structures
- **Questioning** - Precise questioning during lessons are explored to ensure that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts.
- **Teaching misconceptions** Pupils' difficulties and misconceptions should be identified through immediate formative assessment so they can be unpicked and addressed with either same day intervention or whole-class teaching the following lesson.
- **Pupil support -** Through the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with rapid graspers challenged through more demanding problems which deepen their knowledge of the same content.

NCETM Mastering Number Programme

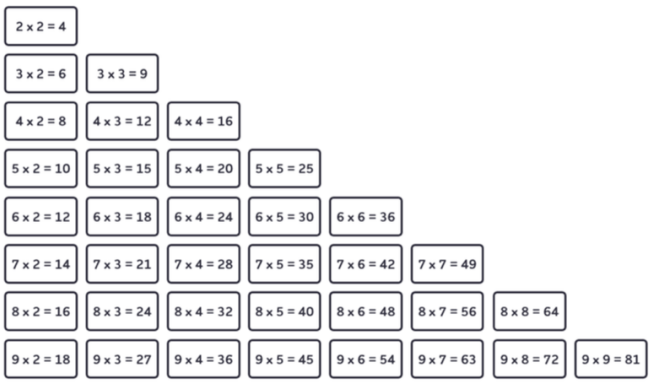
This programme aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. Mastering Number sessions are short (10-15 minutes) daily exercises to provide pupils daily opportunities to learn and develop their fluency in calculation and number.

Pupils in Years 1 and 2 complete all number bond challenges up to 20 before moving on to Times Tables practise.

NumberSense Times Tables Fluency Programme:

All pupils at Burnside will know table facts up to 12 x 12 by the end of Year 4, in line with National Curriculum expectations. Pupils will use the NumberSense Times Tables Fluency Programme and Times Tables Rockstars to learn table facts at school and at home.

How we teach times tables



Children will learn their times tables up to 12 x 12, but we prioritise teaching children to develop automaticity in the 36 essential facts up to 9 x 9. The 10 times table is very important too, but follows an easy pattern so children don't need to memorise it in the same way. These essential facts are the building blocks for all other mental and written multiplication and division calculations that children will do - at school and beyond.

- We have a daily times table session where we learn a small number of new facts at a time - just two or three. Alongside these new facts, we keep practising facts that we know already.
- Children practise until quick and confident, using booklets (aiming for 40 facts in 2 minutes).
- Teachers and pupils chant facts aloud. Saying the facts out loud and practising trying to recall the facts and write them in the booklet, is what leads to memorisation.
- As part of the approach, children learn to apply their memorised fact to all facts in the fact family. For example, we memorise the sound pattern "seven fives are thirty-five" when looking at 5 x 7 = 35, 7 x 5 = 35, 35 ÷ 7 = 5 and 35 ÷ 5 = 7. Children will become very confident at moving between multiplication and division.
- Children will consolidate their learning by accessing Times Tables Rockstars in school and at home. They complete termly 'garage' sessions to assess their progress and identify areas for development.

Catch-up support

Same day intervention: *Teachers ensure they timetable a daily slot to allow a small number of pupils (maximum of 8) to receive additional support following the lesson taught that day. This is to ensure that no pupil falls behind due to lack of conceptual understanding. This can be also integrated into timetabled support from a HLTA / TA where possible. If a greater number of pupils require support, lessons will be retaught the following day, focusing on the areas of misconception through a variation of tasks.*

Assessment

Teachers use formative (in the moment) assessment within lessons to assess how much pupils know and remember. Strategies include: observation, questioning and marking in accordance with our school marking and feedback policy. Information is recorded onto the school's tracking/ assessment system Juniper. This is used to inform future planning and to identify pupils for intervention and support.

We judge the impact of our mathematical teaching by:

- end of Key Stage assessments/NFER assessments
- book scrutiny
- lesson evaluations of the teaching of mathematics;
- pupil interviews;
- learning walks.

Monitoring and evaluation of mathematics:

Monitoring outcomes of pupil's learning and of quality of teaching in mathematics is the responsibility of the mathematics leader and the senior leadership team.

The subject leader for mathematics monitors the quality of mathematics teaching through:

- work scrutiny
- talking to pupils
- observing classroom practice through learning walks.

Professional development

In addition, the subject leader supports colleagues in the teaching of mathematics and informing teachers about current developments in the subject.

Great North Maths Maths Hub

Our partnership with the Great North Maths Hub coordinated by the National Centre for Excellence in the Teaching of Mathematics (NCETM) develops and shares excellent practice within mathematics.

Our participation with the maths hub provides colleagues with:

- Continuing professional development from primary maths specialists;
- Participation in collaborative teacher research groups and projects;
- national networking opportunities with mathematics education professionals;
- Opportunities for staff to be agents of professional development at Burnside.

Maths online resources and games

The links below provide access to up-to-date resources and research in-line with the National Curriculum, support with learning or games which will support pupils' rapid recall, fluency and vocabulary practice at home.

National Strategies

NCETM - www.ncetm.org.uk

NRICH maths - https://nrich.mathematics.org

Maths dictionary - http://www.amathsdictionaryforkids.com/

Third Space learning - https://thirdspacelearning.com/

White Rose - https://whiterosemaths.com/

Online learning

BBC Maths – http://www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml

Maths Salamanders – http://www.math-salamanders.com/ (Excellent for times tables worksheets)

ICT Games

http://www.ictgames.com/resources.html

https://www.topmarks.co.uk/