



Parkside
Primary School

Maths Policy

Reviewed September 2026

Mathematics Policy

‘Mathematics is a creative and highly inter-connected 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.’

(National Curriculum, 2014)

Aims:

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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- 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.

At Parkside our aims align with those of the National Curriculum for Maths.

Our school vision underpins everything we do:

‘Proud To Shine – Growing In Excellence Every Day’

(Learning + Achieving Safe + Happy Respectful + Caring Motivated + Inspired)

This links into our overarching aim for maths which is contained in our vision statement.

We want:

- all the children of Parkside to achieve mastery in maths. This means they will be able to calculate quickly, accurately and with confidence. It also means they will have the skills to solve reasoning questions.
- all the children of Parkside to use and apply their mathematical skills confidently, use mathematical language effectively and to be fluent mathematical thinkers.
- all the children of Parkside to have a growth mindset towards mathematics.
- all the children of Parkside to have a positive attitude to mathematics.
- all the children of Parkside to be reflective learners who are resilient and embrace challenge.
- all the children of Parkside to be active learners.
- all the children of Parkside to be in control of their own learning journey.
- all the children of Parkside to leave our school with the skills to meet the demands of everyday life in the modern world.

We want Parksiders to love maths.

We will achieve this by maximising speaking and listening opportunities, by giving the children time to investigate, by providing problem solving situations and by affording the children the opportunity to work collaboratively.

Spoken Language

The National Curriculum for Mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers will ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions. At Parkside, children are encouraged to justify, reason and provide proof through the use of logic prompts and open ended-questioning. Mathematical discussion is a requisite of every mathematics task both within defined mathematics lessons and through cross-curricular learning.

Calculations

Mathematical proficiency comes from a deep understanding of mathematical skills, concepts and knowledge. Due to mathematics being a highly entwined discipline, we feel that the teaching of calculations should be a well-planned and sequential process. As we have adopted the White Rose Maths programmes of study, we also use the White Rose Calculation policies to provide details of which approaches are most appropriate at each stage.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the skills and processes specified in the relevant age-related programme of study. Each child is expected to achieve to the national standard. Children exceeding this will aim for developing greater depth in their understanding of the elements in the relevant programme of study for their age group.

Teaching and Learning

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. Pupils should experience a range of practical and written activities on number, measurement, geometry and statistics. Year 6 will also study ratio and proportion and algebra.

The White Rose Maths programmes of study support our staff with the teaching (and expediting the learning) of mathematics. The programme provides planning support and assessment materials for EYFS to Year 6. As well as a whole school plan for the academic year (this provides a clear, consistent plan for maths over the year), each year group is provided with a termly overview and both week-by-week and lesson-by-lesson breakdowns.

It is understood that, within a unit of work, the time spent on teaching a specific learning objective or set of learning objectives depends on the needs of the children in the class.

At Parkside, children learn mathematics through the 'concrete, pictorial, abstract' approach.

Concepts are introduced through hands-on experiences with manipulatives, the necessary first step for young children who think in concrete terms. Even older children may revert to this mode when learning a new skill.

Children progress to visualising the concept and represent it pictorially through models like number bonds and bar models, which represents the 'mental image' mode. This mode of thinking assists the children in dissecting challenging word problems and developing logical thinking.

Children only progress to the use of abstract numbers and symbols when they have enough context to understand what they mean, i.e. true abstract thinking without using concrete objects or pictures, a skill required by algebra (and trigonometry and calculus later on).

Mastering mathematical understanding

Concrete – Pictorial – Abstract (C-P-A) approach

Jerome Bruner outlined three steps (or representations) necessary for pupils to develop understanding of a concept. Reinforcement is achieved by going back and forth between these representations.

Concrete – the doing

A child is first introduced to an idea or a skill by acting it out with real objects. This is a 'hands on' component using real objects and it is the foundation for a conceptual understanding.

Pictorial – the seeing

A child has sufficiently understood the hands-on experiences performed and can now relate them to representations, such as a diagram or picture of the problem.

Abstract – the symbolic

A child is now capable of representing problems by using mathematical notation, for example:
 $12 \div 2 = 6$

Teachers model different ways of representing solutions to a problem in order to develop children's conceptual variation and reasoning skills. Children should be encouraged to move between these different stages (sometimes returning to concrete or pictorial) in order to fully understand a mathematical concept.

Classrooms should be rich in discussion between pupils and between teacher and pupils. Some facts will need to be memorised, others will need to be practised but underpinning all of this will be the development of mathematical reasoning and understanding through exploration, problem solving investigation and speaking and listening.

Parkside is committed to mastery for all in maths and we aim to achieve this by mainly working collaboratively in maths. Differentiation is by depth. However, in certain circumstances a teacher may use other forms of differentiation (by support / by task / by outcome).

Teachers at Parkside use a range of teaching techniques such as:

- precision teaching
- focussed teaching
- targeted teaching
- conferencing
- boosting
- shared teaching

- guided teaching

In the Foundation classes direct mathematics teaching occurs in a short, daily, focussed carpet session. This is supported by a mix of teacher-focussed sessions and the presentation of a carousel of mathematical activities during the morning session. There are also carefully-selected resources to encourage child-initiated mathematical play.

The pupils in each year group in KS1 and KS2 are taught in mixed ability classes and mainly work collaboratively (although not to the extent that they lose their desire or ability to work independently). This maximises speaking and listening opportunities for the children which helps to develop reasoning skills, as children are constantly exhorted to talk through each process. The constant support that children receive (particularly dyscalculic children and those with other special needs) negates their fear of maths and promotes a growth mindset and fosters a love of maths. The constant discussion produces learners who can reason, think logically and work systematically to solve problems, both independently and with others and learners who can communicate using sophisticated mathematical language.

Contribution of mathematics to teaching in other curriculum areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others.

Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Science

During science lessons, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

Computing

Children use and apply mathematics in a variety of ways when solving problems using relevant technology. Younger children use computing to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

Personal, social and health education (PSHE)

Mathematics contributes to the teaching of personal, social and health education. The children are encouraged to engage in independent study which helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

Resources

There is a comprehensive bank of resources to support the teaching of mathematics across the school. All classrooms have wide range of appropriate small apparatus (manipulatives). A range of software is available to support work with the computers. Each year group has a wide variety of materials to draw from when planning.

Assessment, Recording and Reporting

Collaborative working affords excellent opportunities for the teacher to assess the children's learning. Observing discussions allows the teacher to instantly recognise misconceptions and correct them. This is another benefit of collaborative learning.

To develop learning, pupils will be continuously assessed using a variety of strategies - observation, questioning, marking in accordance with our school marking policy and testing. Formative assessment will be used to inform planning and to structure the children's next steps in their learning journey.

In the EYFS, pupils will be assessed against the early learning goals at the end of the year. In KS1 and KS2 children are tested using a range of set tasks designated as appropriate to test individual pupils, groups or a whole class on an individual or range of attainments. Information will be recorded onto the schools tracking system to identify children for intervention and support, including those who have achieved mastery and need to study the PoS in greater depth. The Class Teacher, Assessment Co-ordinator, Mathematics Co-ordinator, SENDCo, and Headteacher keep records of assessments. Each pupil will have targets set and checked regularly. These will link to the learning objectives for that year group. Statutory Assessment Tasks (SATs) will be administered in accordance with the law at the end of KS2.

Parent's consultations are held each term where the teacher discusses children's targets and progress in mathematics. In accordance with statutory requirements an Annual Report is sent

to parents towards the end of the Summer Term. This report covers progress and achievements in mathematics, setting targets for future improvement and includes the level achieved in the SATs if appropriate.

Marking

Marking should follow the school's marking code. Marking is instrumental in ensuring that a personalised learning journey for all children is realised. Marking should directly relate to the area of learning success criteria and targets set for each individual. The primary aims of marking are to ensure that the pupil can move their learning forward and that teachers know what the gaps are so that this information can support the planning process. Children are routinely given time to respond to the marking done by their teacher.

Marking can take a variety of forms depending on the intention, age and activity. Our aim is for pupils to have full ownership of their work and be able to review and identify their own next steps (with guidance from the teacher).

Monitoring and review

Monitoring of the standards of children's work and of the quality teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The mathematics subject leader gives the head teacher an annual summary in which she evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The Headteacher allocates regular management time to the mathematics subject leader so that they can review samples of children's work and undertake lesson observations of mathematics teaching across the school

A named member of the school's governing body is briefed to oversee the teaching of numeracy. This governor meets regularly with the subject leader to review progress.

We will judge the success of our mathematical teaching by:

- The motivation and interest displayed by our pupils
- KS2 SAT results
- Success in meeting targets
- Data analysis
- Book scrutinies
- Pupil conferencing
- Observations of the teaching of mathematics

Equal Opportunities

Our expectations do not limit pupil achievement. We set targets to meet the individual needs of each child and for them to be aware of the next steps in their learning journey. We aim to challenge and extend children to help them achieve increased independent thinking.

We use a full range of teaching and learning styles to ensure that all our children have the opportunity to gain mathematical knowledge and understanding regardless of their gender, race, class, physical or intellectual ability.

Equality statement:

“The governors and staff are committed to providing the full range of opportunities for all pupils, regardless of gender, disability, ethnicity, social, cultural or religious background. All pupils have access to the curriculum, and the right to a learning environment, which dispels ignorance, prejudice or stereotyping.”

Name of Reviewer:

Reviewed and updated:

Date of approval by Governing Body:

Signature of Chair Governors:

Signature of Headteacher:

Date due for review: