Aintree Davenhill Primary School

Mathematics Policy

Approved by the Headteacher

June 2025

Aintree Davenhill Mathematics Policy

Mathematics Curriculum Intent

Mathematics is a crucial part of everyday life, providing a means of viewing and making sense of the world. It is vital that children are aware of the importance of mathematics beyond the classroom and can use and apply the knowledge, skills and understanding they acquire. It is necessary to provide firm foundations for subsequent mathematical learning and for everyday life in general.

Our school motto is **Excellence and Enjoyment** meaning that we want children to enjoy mathematics and have a positive attitude to the subject. Our vision is also for our pupils to achieve excellence in mathematics and in every aspect of school life. We believe that successful learning enables children to develop the confidence to meet the challenge of new work.

In mathematics at Aintree Davenhill, our aim is for all pupils:

- to develop excellent mathematical skills, becoming **fluent** in the fundamentals of mathematics so that pupils develop understanding, and the ability to recall and apply knowledge rapidly and accurately
- to be critical thinkers and **reason mathematically** by following a line of enquiry, investigating and identifying relationships and generalisations, and developing an argument using mathematical language
- **to solve problems** by applying their mathematics to a variety of puzzles and challenges, and develop the determination to keep working when problems become more challenging

During lessons, we plan opportunities for the children to practise their mental maths, develop the accuracy of written methods and solve a range of puzzles and problems working independently, in pairs and in groups.

Using the National Curriculum, we aim to promote:

- confidence and self assurance, to provide challenge and a sense of achievement for all pupils, for whom mathematics should be an experience from which they derive pleasure
- language, to facilitate pupils' fluency in communication and analysis of mathematical ideas and information
- practical use of the subject, to create skilled practitioners of mathematics, using it as a tool within both school and adult life
- conceptual structure, to develop understanding of patterns and relationships in mathematics, highlighting its own fascination and cross-curricular applications
- logical thought, systematic thinking and working, to enable pupils to work in a logical and systematic manner
- flexibility of styles and attitudes in both teachers and pupils

Mathematics Curriculum Implementation

From Reception to Year 6, we follow the Red Rose Maths planning scheme. This ensures that the sequence of learning shows progression within each year group and across the school.

In implementing the National Curriculum, we recognise a commitment to the following:

1) Developing children's confidence and competence with numbers and measures.
2) Developing their understanding of the number system, computational skills and an ability to solve number problems.
3) Developing an understanding of the ways in which information is gathered and presented.
4) 60 minutes structured daily mathematics lessons – oral and mental work, main teaching activity, plenary.
5) Daily calculation practice and application of the four methods of calculation (from Years 1-6).
6) An emphasis on oral and mental methods from the Early Years to develop and secure calculation strategies and rapid recall skills.
7) Adopting a structured approach to the teaching and learning of mathematics vocabulary.
8) Providing links between mathematics and other subjects.
9) Providing out-of-class activities/homework activities that are varied, interesting and fun and that consolidate or build upon the work done in the mathematics lesson.
10) Maintain our current approach to the NCETM Mastering Number project.

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.

Planning

In each year group, teachers work together to develop their long, medium and short term plans for mathematics based on the Red Rose Maths Planning Scheme.

At the planning stage, teachers identify the possibilities for using mathematics across the curriculum and also identify opportunities to develop children's speaking and listening skills and understanding of maths vocabulary.
Short term planning is done on a weekly basis using the agreed format. Consideration is given to what the pupils have already been taught in order to build on the concepts, knowledge and skills they have acquired and with their specific targets in mind.

Each lesson shows the objectives and the activity for the mental and oral work. The main activity is planned with adaptive learning at the forefront to ensure that all children access the lesson objective. The lesson planning shows lesson objectives, key vocabulary and resources to be used. Where a child is unable to access the work planned for the lower ability group, teachers use additional

assessment information together with a SEND Support Plan to develop fourth level planning.

The focus of the plenary is planned for and homework considered.

Teaching and Classroom Organisation

Effective learning is dependent upon the environment provided by the teacher. Teaching styles are of paramount importance. Paragraph 243 of 'Mathematics Counts' (Cockroft Report 1982) states that:

Mathematics teaching at all levels should include opportunities for:

- exposition by the teacher
- discussion between the teacher and pupils and between pupils themselves
- appropriate practical work
- consolidation and practice of fundamental skills and routines
- problem solving, including the application of mathematics to everyday situations, investigational work

Effective teaching involves:

- high expectations and clear objectives conveyed to the children
- well-structured lessons and a suitable pace
- daily oral and mental work
- use of correct mathematical vocabulary and notation
- effective differentiation and questioning in whole class work to involve all children and make informal assessments of their progress
- effective use of adaptive teaching to support children of all attainment levels
- challenge for all children
- well organised group work so the teacher can teach without interruption
- varied opportunities for children to demonstrate and explain, do practical work, discuss, practice, solve problems
- purposeful plenary: key learning points reinforced, misconceptions dealt with, links made to other topics, homework set
- support staff deployed effectively

Marking

<u>KS1</u>

Work is marked as the children are working or after each lesson using blue/green pen.

<u>KS2</u>

Children are taught to self-mark their own work at 'marking stations' around the classroom. Children complete four or five questions before marking their work (using a blue-coloured pencil). If the children have a lot of incorrect answers, they indicate to the class teacher or T.A that they need further help with their work during the lesson. At the end of the lesson, the teacher looks at the children's work.

Teachers are encouraged to focus on the learning objective when marking. When a teacher's comments on children's work it may relate to how well they have achieved the lesson objective or teachers may provide questions for the children to answer to further their understanding or provide challenge. Children are given opportunities to make some corrections or tackle a further challenge

during ‘Fix it Time’. Where serious misconceptions arise, time will need to be set aside to revisit or review the learning objective.

Assessment and Record Keeping

Self-Assessment

At the start of every unit, children complete a Learning Check from the Red Rose planning scheme, which includes questions that cover concepts the children will be learning during that half-term. At the end of the half-term, children again answer the same questions. This form of self-assessment helps to show the children their progression in learning, and helps them to identify any areas they need to still work on.

Short Term Assessments

Short-term assessments enable teachers to:

- check that children have grasped the main teaching points
- see if the children are remembering number facts and using mental strategies
- plan appropriately

Medium Term Assessments

Each term the children are given an assessment test and teachers review children’s progress in the test and in their written work against key expectations for their year group.

Long Term Assessments

In the Early Years Foundation Stage at Aintree Davenhill, on-going assessments are made and each child’s progress is discussed with their parents at Parents’ Evening and reported on in their mid-year and end-of-year report.
All teachers, at the mid-point of the school year and at the end of the school year, make assessments of a child’s attainment in mathematics against National Curriculum expectations for each year group.
SATs are carried out in Year 6. In Years 1, 2, 3, 4, 5, the children do assessment tests. The scores, which result, help to monitor pupils’ individual and collective progress against the national expectations, between classes and previous years. Results of tests (Year 6) and teachers’ assessments (Year 2) are included in the school end of year report to parents, as is the child’s target for the following term. The results of tests, teachers’ assessments and a record of which key expectations are secure for each child, plus specific areas of difficulty, are passed on to the next teacher.

Target Setting

Each child’s targets are identified from the children’s Learning Check which forms part of the teacher assessment on the Red Rose Scheme. Learning Checks are completed at the start of each unit.

Resources

In addition to the Red Rose planning scheme, teachers have access to a wide range of resources to support the teaching of mathematics.

Most widely used resources are Times Tables Rock Stars, Mathematical Challenges, NRich, BEAM and Oak National Academy.
Teachers use high quality ICT resources for teaching mathematics – particularly during mental and oral starters.
Teachers are encouraged to allow the children to use personal whiteboards throughout the maths lesson (particularly to guide mental and oral starters) to ensure whole class participation.
Each classroom has a variety of resources for number: counting sticks, number lines, digit cards or fans, place value cards, 100 number squares or lines, vocabulary cards, dice, counters, rulers, coins, Numicon and Base 10 apparatus. At Key Stage 1, each class has a variety of mathematics resources for sorting, and counting, etc. Careful timetabling of some resources is necessary if year groups are all meeting a particular topic or unit of work at the same time.
Depending on the nature of the maths work, written work is recorded in the majority of occasions in plain paper maths books or when deemed necessary on worksheets. The use of a plain paper maths book allows children to record in different ways, encourages informal jottings and allows them to be more creative in their maths recording.
It is important for maths posters and maths work to be displayed and seen to be valued alongside all other work displayed. Each classroom devotes one display board to mathematics and key vocabulary, number lines and squares are in evidence. In each class (Years 1-6) 'Methods of Calculation' posters are displayed to support the children during calculation practice.
The development of good working habits is essential. Children learn from an early age to take care of, and be responsible for equipment, materials and books. In particular, to take pride in a high standard of presentation of their mathematics work.

ICT
Children have the opportunity to enhance their mathematics with ICT through small software programs, floor robots/logo, graphics and drawing packages, databases and spreadsheets. The school has developed its capacity to use interactive teaching methods and programs.

Special Needs/Equal Opportunities
The Warnock report, 1981 Education Act and national curriculum documents stress that each pupil is an individual who may have special educational needs. It is the duty of every school to provide for these needs and equally the needs of the gifted child must not be overlooked.
Teachers aim to include all pupils with SEND fully in the daily maths lesson. They benefit from the emphasis on mental and oral work and participate in and listen to other children demonstrating and explaining their methods.
Materials, equipment and furniture are adapted to meet their particular needs so that they can work alongside their peers. Children with SEND usually work on the objectives for their year with differentiated tasks planned for three levels of ability. Intervention groups are organised to provide children with more time to practise key mathematical skills.
For a pupil with severe or complex difficulties, additional assessment information together with a Support Plan is used to develop fourth level planning.
Teachers use the framework to identify suitable objectives to be incorporated into Support Plans.

We allow equal access to the mathematics curriculum to all pupils regardless of gender, home or cultural background.
Attention is paid, by those teaching and assessing progress in mathematics, to the language difficulties and gender expectations, which may also be a barrier to progress.

Parental Involvement
The Early Years staff work hard to ensure that children make a smooth transition from Nursery into Reception. This is also true for children who have not previously attended Aintree Davenhill's Nursery.
Parents of children in Reception are invited to attend maths workshops about how maths is taught in school and how to support their child at home.
Children will receive regular maths homework, maths games, practical activities or written work and it is expected that parents will encourage and support their child in completing the work to a high standard.
Parents' Evenings are held once a year and parents are invited to discuss their child's progress. At the Curriculum Evening (Meet the Teacher), held at the beginning of the school year, methods of calculation are explained to parents and copies of notes are provided to enable parents to support their children during homework tasks.

Impact of the Mathematics Curriculum

Monitoring and Evaluation
The mathematics curriculum is monitored by the Head teacher, the Mathematics Subject Leaders along with the Maths Team and the Leadership Team through:

- observation of lessons – feedback to teachers
- monitoring the planning of the mathematics curriculum
- looking at work in the children's books and talking to children
- Key Stage 2 SATs results and other maths assessments
- curricular targets and targets set for the school
- resources being used
- courses and INSET attended by staff
- evaluation of the maths action plan for the SIP
- talking to pupils and staff

The Maths Subject Leader uses information gathered from the above plus knowledge of National and LEA initiatives to develop the action plan for maths for the School Improvement Plan.

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