



## Darell Primary and Nursery School

# Maths Policy

**The status of the policy:** Recommended

**The purpose of this policy is to:**

- Set out expectations for the teaching of maths at Darell
- Ensure consistency and progression across the school
- Enable teaching staff and support staff to feel confident when teaching maths
- Act as a reference point for staff

**Links with other policies:**

- Assessment
- Calculations

**Monitoring and evaluation:**

This policy is reviewed every three years and monitored by the Achievement and Curriculum Committee

Date established by SMT: 25.11.15

Date for full implementation: 26.11.15

Date for Review: 26.11.18

Signed: .....  
Chair of Governors

Signed: .....  
Headteacher

**MATHS POLICY**  
**Sarah Millener, November 2015**

## **Introduction**

At Darell Primary and Nursery School we believe that children should leave primary school with a love of maths and the confidence to take risks with their learning instilled in them. A high quality mathematics education provides children with the skills required to work within our world today. Through the maths curriculum we help children to learn how to problem-solve and to develop fluency with number and other aspects of maths. Through whole class teaching, group work and independent learning, children are encouraged to be inquisitive and to question themselves and each other in their quest to learn. The new mathematics curriculum places a strong emphasis on reasoning and calculating, which are explicitly taught in maths lessons.

This policy describes Darell's aims and objectives in relation to the teaching and learning of maths. It reflects our commitment to deliver excellence in the teaching of maths. It should be read in conjunction with the 2014 National Curriculum and the Early Years Foundation Stage Framework, which sets out the rationale for teaching each area of the maths curriculum and specifies the skills to be developed by children in each year group.

## **EYFS**

In the Early Years mathematics is taught through the Foundation Stage Curriculum. Teachers relate the mathematical aspects of the children's work to the objectives set out in Development Matters. Teachers give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through the varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

Number Early Learning Goal: Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

Shape, Space and Measure Early Learning Goal: Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

## **Key Stage 1**

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the 4 operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve

using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

## **Key Stage 2**

### **Lower KS2**

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

### **Upper KS2**

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

### **Strategies of teaching**

We believe that number forms the foundations of learning across the maths curriculum. Arithmetic is a key feature of maths at Darell, with children being taught a range of strategies to work out answers as well as demanding a quick recall of simple mathematical facts. Written calculations are taught with clear progression across the year groups (see Calculations Progression). The teacher gives demonstrations and explanations, with an emphasis on the use of appropriate mathematical language and engages in whole class interactive teaching, involving:

- whole class, group discussions and paired work
- practise to consolidate specific skills
- problem solving and investigational activities in order to learn how to break down a problem
- practical activities
- mathematical games and puzzles.

The use and application of mathematical principles underpins the whole of mathematical teaching and learning. Opportunities are given so that pupils can apply their knowledge to a wide range of real life situations. They need to be able to choose appropriate equipment and methods for the task and be able to communicate and justify their findings in a manner appropriate to their age and ability, showing increasing concern for clarity and accuracy of meaning.

The EYFS classrooms are organised to promote social skills and to develop the mathematical understanding of young children through stories, songs, rhymes, finger games, board games, sand and water, construction on a large and small scale, imaginative play, outdoor play, cooking and shopping, 2 and 3-D creative work with a range of materials and by observing numbers and patterns in the environment and daily routines.

Children in years 1 to 6 practise arithmetic in a session outside their daily maths lessons. The children undertake an arithmetic test or, when appropriate, receive teaching that supports them in the answering of such arithmetic questions. Children in years 4, 5 and 6 take the test home so that they can practise any methods with parents/carers for homework and are then given the opportunity to have another go at the test the following week.

Children in years 3 to 6 are taught a weekly basic skills lesson in which they consolidate the age-appropriate learning of the 4 operations: addition, subtraction, multiplication and division.

### **Planning**

Weekly maths plans should be saved on the server in the planning folder in the relevant year group. All staff use Abacus to aid their planning, ensuring that they adapt their

planning by including notes on objectives, tasks, activities and grouping, success criteria, resources and use of support. Teachers will use 'I can' statements in planning and emphasise the success criteria at the beginning of each lesson.

### **Displays**

Each classroom has a maths display which is used to inform teaching and learning through the use of number lines, hundred squares, multiplication squares and mathematical vocabulary.

### **Assessment and marking**

Assessment and marking should be carried out in line with the relevant school policies.

### **Maths Mountain**

Children from Reception to year 6 all take part in Maths Mountain which is a scheme run by parent volunteers to encourage children to develop their number fluency. The children are given individual targets to work on at home and progress through the levels at their own pace. When they have completed a certain level by answering a range of number based instant recall number facts, they are awarded a certificate in a celebration assembly.

### **EAL / Inclusion / SEN / Gifted and Talented**

Teaching is planned to provide for the full range of prior attainment within each class. Throughout the lesson the teacher has these needs in mind and directs questions and provides activities to cater for this range of pupils.

There are opportunities for able pupils and those with specific difficulties to work in smaller groups, usually focusing on the same objectives but at a differentiated level.

Able pupils normally work on the same topics as the rest of the class, but activities are planned to stretch their abilities and enrich their mathematical experiences. This may be done by providing more demanding questions and investigations, often with a more open-ended approach.

Lower attaining pupils normally work on the same topics as the rest of the class, but activities are planned to enable them to succeed. They may at times be working from the objectives from the previous year group. Those children with an Individual Education Plan have specific targets each term for mathematics where appropriate. Progress in maths is monitored, and targeted interventions are put in place to ensure rapid progress.

### **Homework**

Homework is usually given as a consolidation of the work/skill that the children have been learning in class that week through mathematical activities, games or puzzles. The children may be assigned a game or activity on the online resources Active Learn or Education City. Each child has their own log-in username and password.

## **Cross-Curricular Links**

Cross curricular links will be made whenever appropriate, for example, the use of measurement in science, model making and design, the use of graphs or geometric patterns in art, the use of space and direction in P.E. and other aspects of topic work. As far as possible we will attempt to provide 'real life' situations which enable children to use their mathematical skills.

## **Monitoring and evaluation**

The purpose of monitoring and evaluation activities is to raise the overall quality of teaching and levels of pupil attainment. The mathematics coordinator and Headteacher monitor the quality of teaching and learning.

Monitoring focuses on:

- scrutiny of planning
- quality of teaching through lesson observation and feedback
- moderation of standards in children's work
- evaluation of children's attainment against targets.