Overdale Infant School and Pre-school

MATHS POLICY
2019/2020

Policy Review Date:	October 2020		Headteacher – Hayley Holmes	Signature
Ratified by Governing Body: October 2019				
Chair of Governors - Daniel Routledge			Signature	

Rationale

“Mathematics is a creative and highly inter-connected discipline ... It is essential to everyday life...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.”

When children leave Overdale Infant School we aim for them to

- Have a ‘can do’ attitude, showing confidence, resilience, enjoyment and curiosity for maths.
- Have good ‘number sense’, “a well organised conceptual framework of number information that enables a person to understand numbers and number relationships and to solve mathematical problems” NRICH
- To be mathematical thinkers, by noticing patterns, showing and talking about their thinking in different ways, making connections and seeing relationships, noticing what is the same and what is different?

All children need a “deep understanding of the mathematics they are learning so that future mathematical learning is built on solid foundations which do not need to be re-taught” NCETM

The Policy seeks to contribute to the school’s aim of meeting the needs of all pupils and should be read alongside the Equal Opportunities Policy, Racial Equality Policy, S.E.N. Policy, Inclusion Policy, Gifted and Talented Policy and other Subject Policies.

Purpose

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

Expectations

The EYFS document outlines that by the end of Foundation Stage children will be able to :

“Early Learning Goal- Number
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.”

Early Learning Goal – Shape, Space & Measure
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.

The National Curriculum document states:

“The programmes of study for mathematics are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, schools therefore have the flexibility to introduce content earlier or later than set out in the programme of study. In addition, schools can introduce key stage content during an earlier key stage, if appropriate. All schools are also required to set out their school curriculum for mathematics on a year-by-year basis and make this information available online.”

“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 four 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.”

Progression of counting and calculation methods:

We have been working with maths consultants, the NCETM maths hubs, city and county primary colleagues to develop our maths provision. Staff participate in ongoing INSET regarding this approach throughout the year.

Guidelines

- **Safeguarding**

  We will protect children from maltreatment, prevent impairment of children's health or development and ensure that children are growing up in circumstances consistent with the provision of safe and effective care.

- **Equality**

  All children will have access to the same opportunities, irrespective of gender, age, race or ability in the development of their mathematical curriculum.

- **Prevent Duty**

  We focus on children's personal, social and emotional development, ensuring children learn right from wrong, mix and share with other children, value other's views, know about similarities and differences between themselves and others, and challenge negative attitudes and stereotypes.

- **Organisation**

  In Reception, Years 1 and 2, maths is taught using maths mastery approach. In the Foundation Stage, staff ensure a balance of adult led and freely chosen, or child initiated, activities to ensure the children are actively involved and interested. Mathematics is found in the EYFS Document.
  "Staff use a set of pedagogic practices that keep the class working together on the same topic, whilst at the same time addressing the need for all pupils to master the curriculum and for some to gain greater depth of proficiency and understanding. Challenge is provided by going deeper rather than accelerating into new mathematical content." NCETM

- **Planning**

  Teaching is focused, rigorous and thorough, to ensure that learning is sufficiently embedded and sustainable over time. Following the mastery approach, children work on the same tasks and engage in common discussions. Differentiation is achieved through choice of manipulatives, visual representations, skilful questioning, support given. Difficulties and misconceptions are identified through regular formative assessments and addressed with quick intervention.

  Planning is completed at three levels

  - Long term planning is based on the yearly teaching programmes set out in the Development Matters and National Curriculum documents.

  - Medium term planning is carried out on a termly or half-termly basis. Teachers select a combination of the main teaching objectives to ensure a balanced curriculum that covers aspects of reasoning, number, calculations, shape, measures and data handling. As a school we have made the decision to place a greater emphasis on number and calculation due to the emphasis placed on such knowledge and skills at the end of key stage SATS

- Weekly planning includes the learning to be reviewed, introduction to new learning, exploration of new learning, discussion of the new learning and making connections to prior learning, guided and independent practise of the learning. (Also included within a week are independent activities, sometimes linked to the new learning and sometimes reinforcing previous learning). Planning reflects a greater emphasis of mastery of the skills of mathematics. Teachers ensure that children have adequate time to develop their fluency and understanding, combined with opportunities for children to reason and solve problems, before moving on to new concepts. Differentiation is evidenced through the amount of support and intervention needed, skilful questioning and/or the resources used, not in the content taught. Challenge is through complex problem solving to deepen understanding, not a rush to new mathematical content.

- **Assessment**

Assessment of Mathematics is in line with the school's Assessment Policy. It is an integral part of the teaching process and the School endeavours to make assessment purposeful, allowing work to be matched to the needs of all pupils. Teachers complete assessments relating to the key learning objectives in Mathematics for each year group. The information collected is recorded on class ipads using the 2simple program as well as on assessment grids. Additional assessment information includes EYFS Profile and SATs results as well as online data.

Assessment opportunities are built into medium term and weekly plans.
Teacher assessment is made through:

- Observations and notes taken about individual children
- Discussion with children, colleagues, parents
- scrutiny of work
- specific activities linked to the assessment grid

Pupils' progress is communicated to, and targets shared with, parents through twice yearly Parents' Evenings. A written report is also sent to parents during the Summer Term.

- **Cross Curricular Work**

Children are made aware of links between Mathematics and other curricular work so they understand that Mathematics is not an isolated subject and that the mathematical skill of reasoning can be transferred to other subjects. Where possible links are made through the topics/themes and attention is drawn to maths around us in our every day world.

- **I.C.T.**

ICT is used in Mathematics lessons when it is an effective and efficient way to meet the lesson's objectives. This will include the use of computers, ipads and interactive white boards.

- **Responsibilities**

Mathematics Co-ordinator

- to support staff in the development of new initiatives.
- to promote high standards of teaching and learning in mathematics.
- to monitor and evaluate the quality of teaching and learning throughout the school.
- to monitor pupils' books and folders.
- to inform the Headteacher and Governors of developments and changes in Mathematics.
- to check, audit and purchase resources.
- to ensure resources are stored centrally and each classroom has a basic stock.

Headteacher

- to be well informed, provide active leadership and set high expectations for what can be achieved by staff and pupils.
- to observe Mathematics lessons and give feedback for improvements.