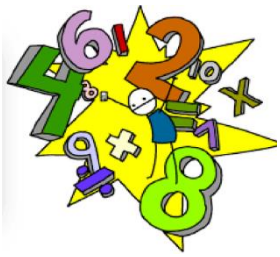
Mathematics at Downview



Intent: This is why we teach what we teach:

At Downview Primary, Maths is fully inclusive to every child. Our aims are to: fulfil the requirements of the National Curriculum for Maths, provide a broad and balanced curriculum and ensure the progressive development of knowledge and skills.

We recognise that Mathematics is important in our everyday lives. It is integral to all aspects of life and, with this in mind, we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them and enable them to draw upon throughout their lives. Our policy outlines our aims for maths and what we want the children to be able to understand, know and do.

At Downview, we follow the National Curriculum. This aims to ensure that children are proficient in 3 areas:

Fluency – the children should 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.

Reasoning – the children should be able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

Problem solving – children 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.

Implementation: This is what we do:

To ensure high standards of teaching and learning in Mathematics, we implement a curriculum that is progressive throughout the whole school.

In the course of the week, each child will receive a daily session of mathematics teaching and other opportunities to practise learning or to address misconceptions from previous lessons.

Oral work/mental calculation/arithmetic practise in which the whole class works to rehearse, sharpen and develop mental and oral skills.

Main teaching input and pupil activities in which:

- A new topic is introduced, or previous work is consolidated or extended.
- Vocabulary is developed, using correct notation and terms and using new ones.
- New concepts and skills are used and applied.
- Children will develop their fluency, reasoning and/or problem solving skills.

Reception

In Reception, emphasis is placed on practical activities and informal recording, working towards a more formal recording. Children are given opportunities to work through a variety of planned practical experiences that develop mathematical understanding, language and skills. Children use a wide range of practical resources to gain the deeper understanding of a concept. Children are immersed with basic mathematical vocabulary and learn this through stem sentences and displays. Activities are adult led but there is also continuous provision in the area and weekly morning activities to cement their understanding.

Key Stage 1

In Key stage 1, emphasis is placed on practical activities and informal recording, working towards a more formal recording. Children are given opportunities to work through a variety of planned practical experiences that develop mathematical understanding and skills. Children should be developing the ability to explain their reasoning (this will be recorded by an adult or by the child themselves, depending on their age and stage).

Key Stage 2

At Key Stage 2, children are provided with practical experiences and problems, set in a context which will help them to understand concepts and deal with Mathematics in an abstract form. The children will use a range of concrete and pictorial methods alongside abstract forms. Children will continue to develop the ability to explain their reasoning (this will be recorded by an adult or by the child themselves, depending on their age and stage).

Impact: By the time children leave our school, they will:

Within Maths, we strive to create a supportive and collaborative ethos for learning by providing investigative and enquiry based learning opportunities to help children gain a coherent knowledge and understanding of each unit of work covered throughout the school.

By the time children leave our school, they will:

- Have a sense of the size of a number and where it fits into the number system
- Know by heart number facts, such as number bonds, multiplication tables, doubles and halves
- Be able to use concrete, pictorial and abstract approaches (build it, draw it, write it). This will include a range of representation and structures such as: use of manipulatives, bar modelling or part-part-whole diagrams, formal written calculations.
- Use what they know to figure things out mentally first
- Calculate accurately and efficiently, both mentally and in writing, drawing on a range of calculation strategies (also see the school's calculation policy and guidance for parents)
- Make sense of number problems, including non-routine problems, and recognise the operations needed to solve them
- Explain their methods and reasoning using correct mathematical language.
- Judge whether their answers are reasonable and have strategies for checking them where necessary
- Suggest suitable units for measuring and make sensible estimates of measurements
- Explain and make predictions from the numbers in graphs, diagrams, charts and tables
- Develop spatial awareness and an understanding of the properties of 2D and 3D shapes