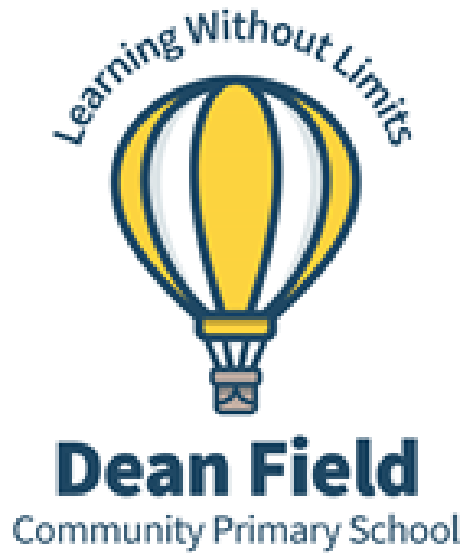


Dean Field School

Mathematics Policy



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Introduction

This document is a statement of the aims, principles and strategies for the teaching, learning and assessment of Mathematics at Dean Field Community Primary School. The implementation of this policy is the responsibility of all teaching staff.

Intent

Our intention is for all children to enjoy mathematics and to develop a secure and deep understanding of fundamental mathematical concepts. We aim to equip children with a set of tools to help them understand and succeed in the world. These tools include problem solving skills, logical reasoning skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum order for mathematics describes in detail what pupils must learn in each year group. This, combined with our calculation policy and progression document ensures continuity and progression as well as high expectations for attainment in mathematics.

Our Aims

- To deliver quality first teaching to all pupils.
- To provide the resources needed to support progress.
- For pupils to become fluent in the fundamentals of mathematics.
- For pupils to develop a deep conceptual understanding in the fundamentals of mathematics.
- To develop pupils rapid recall of number facts.
- For pupils to explain their methods and reasoning mathematically and to justify their reasoning with the correct use of mathematical vocabulary.
- For pupils to make sense of number problems, including non-routine / 'real' problems and identify the operations needed to solve them.
- For pupils to become confident, independent learners.

Implementation:

Planning

At Dean Field, mathematics is taught in the order of the National Curriculum strands to support coverage and ensure that learning is built on prior knowledge and skills. Teachers use the National Curriculum, White Rose Maths and our progression document when planning and breaking down objectives into small steps.

The subject leader provides a long-term overview of the objectives that should be taught. Although NC strands are taught in order in line with the White Rose maths steps, the time spent teaching each strand is flexible and based on the children's level of understanding.

To support maths teaching in school, teachers produce 'must knows' when planning to help children understand key principles and vocabulary. Vocabulary is progressive through school and teachers use the progression document when planning their unit of work. Must knows include new vocabulary and previously taught vocabulary to aid retention. Where appropriate, children will have their own 'My Must Knows' to ensure they have retained knowledge and skills at a secure level before moving on too quickly and having gaps in their learning.

Maths lessons are planned using a mastery style approach. Lessons progress through concrete, pictorial and abstract methods and all students are challenged with problem solving and reasoning tasks.

With thoughtful planning, teachers integrate maths across the curriculum wherever possible. For example, in science lessons, PE and even topic lessons. The children may be taught a new objective or work on consolidating existing learning.

In all classrooms, children have access to iPads to integrate computing in to their lessons. Tasks completed on the iPads are often planned in to maths lessons.

Developing a strong sense of number in the early years is essential so that all children develop the necessary building blocks to prepare them for the National Curriculum. Teachers carefully plan tasks which allow the children to build and apply their understanding of the numbers to 10, the relationship between them and the patterns within those numbers. They are exposed to and taught mathematical vocabulary from which the mastery of mathematics is built. Opportunities are provided for the children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures

Teaching

At Dean Field we teach maths using a mastery style approach. We believe in the 5 big ideas in teaching for mastery –

Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

The maths curriculum is delivered by class teachers and supported by teaching assistants. In all classes, every child is challenged with problem solving and reasoning tasks. Children work in a range of groupings including whole class, small groups, pairs and independently.

Work is recorded in exercise books along with tasks completed on Seesaw. All work shared on Seesaw is saved in the 'Maths Folder'.

EYFS

In Nursery and Reception classes, Ten Town is used to develop children's number sense. Ten Town is a progressive and unique early year's scheme which links to our mastery approach. Planning is devised into 4 sections: Comparison, Counting, Composition and Change. These sections are taught repeatedly over 2 weeks in regards to one number. This is so children are continuously building on different mathematical concepts throughout their time in Reception, ensuring they are ready to embark on mathematical learning in Y1. Alongside their input children have daily access to a maths area and different mathematical challenges through play. The children can also access Ten Town at home using their personal log in details.

From 2021, we took part in a new programme from the NCETM for early primary pupils, Mastering Number. This was a year-long project aimed at strengthening the understanding of number, and fluency with number facts, among children in the first three years of school.

In the EYFS, maths long term plans start in Nursery and sequence specific knowledge and skills embedded into engaging topics to benefit the children's knowledge and understanding in maths and prepare them for a deep understanding further up school. The long term plans then continue right up until year 6.

Key Stage 1:

In years 1 and 2 a mastery style approach is used in the teaching of mathematics. Children are taught sequenced small steps daily allowing them to keep up, not catch up. Lessons recap prior learning and are built upon each day. Methods progress through concrete, pictorial and abstract. Most, if not all, children work towards meeting the same objective with some children's learning being scaffolded or supported. If needed, children receive immediate or same day intervention. Children

of all attainment groups are challenged with suitable reasoning and problem solving tasks.

Years 3, 4 and 5

In these year groups maths is taught using the same day intervention method. This is a project, funded by the EEF (Education Endowment Foundation) which fits with Dean Field's mastery style approach. As per KS1, children are taught sequenced small steps daily allowing them to keep up, not catch up Lessons recap prior learning and are built upon each day. Methods progress through concrete, pictorial and abstract. Most, if not all, children work towards meeting the same objective with some children's learning being scaffolded or supported.

After a 30-minute lesson, pupils answer some questions independently to check how well they have understood the lesson. This is called a diagnostic. They then have a 15 minute pit stop break. During this time, the class teacher marks and assess the diagnostic.. The remaining 30 minutes of the lesson is an intervention session, where the teacher groups children together based on how they answered the questions so that they can efficiently address common misconceptions. Children who require intervention receive quality first teaching from the class teacher. Children who are ready and able move on to orange and red reasoning and problem-solving challenges. The aim is to use the additional support to ensure that all children reach a certain level of understanding by the end of the day, preventing an achievement gap from forming. This approach is proving to be very successful.

Year 6

A mastery style approach is used in the teaching of mathematics. Children are taught sequenced small steps daily allowing them to keep up, not catch up Lessons recap prior learning and are built upon each day. Methods progress through concrete, pictorial and abstract. Most, if not all, children work towards meeting the same objective with some children's learning being scaffolded or supported. If needed, children receive immediate or same day intervention. Children of all attainment groups are challenged with suitable reasoning and problem solving tasks.

Resources

Most mathematics resources are stored centrally in the maths cupboard. Regularly used resources may be stored in classrooms for ease of access. Resources are updated where applicable to meet the needs of the new curriculum. We have access to many high quality, online resources such as White Rose premium resources, Classroom Secrets and LBQ as well as I See reasoning and I See problem solving resources.

Inclusion:

At Dean Field, Mathematics is implemented and taught in small steps and teachers ensure that there is a broad and balanced coverage of the National Curriculum. Work is accessible, challenging and engaging for all learners to ensure that true progress is made. We ensure this is the case by posing thought provoking questions, providing high quality and differentiated reasoning and problem solving challenges, and providing extension tasks. For each strand of maths, our 'My Must Knows' provide a set of key facts and vocabulary; these are used to recap prior

learning for retention, pre-teaching, home learning tasks and assessment. We also aim to provide opportunities for our pupils to develop their cultural capital linked to their mathematical learning and includes workshops, school trips with a mathematical focus and visitors within school., Mathematics is taught across the key stages in ways that enable each child to access the National Curriculum, regardless of ethnic group, age, disability, SEN and gender. Where children have significant needs, they may be taught and assessed against BSquared mathematics objectives, in-line with their specific requirements. These are then reflected in 'My Must Knows' if needed.

Monitoring and reviewing

All teachers are responsible for monitoring their year group for Maths. They will assess children's work by monitoring the children within the lesson and supporting and challenging them where necessary.

During lessons and on completion of work, the teacher marks and assesses the work and uses this to inform future planning. Written or verbal feedback is given to the child to help guide their progress. Children are encouraged to judge their own work and assess themselves against the objectives. The teacher uses all of this information to determine whether a catch up session or intervention is needed before the next lesson.

The maths leader is responsible for improving the standards of teaching and learning in maths by auditing and supporting colleagues in continuing professional development (CPD) whilst attending maths related training to disseminate to other staff members and develop own CPD as a leader.

The maths lead monitors progress in maths through lesson observations, book looks, learning walks, pupil interviews and discussions with staff.

Impact

Assessment and Feedback

All teachers use the progression document in mathematics as a tool for teaching and assessment. The progression document ensures that teachers are able to understand what has been previously been taught, what they need to teach in their year group and what will be taught next. It is also a tool for identifying any gaps in pupils' learning and allows teachers to plan for this effectively. Teachers then assess children's progress by making informal judgements during lessons; this informs planning for subsequent learning experiences.

Children demonstrate their ability in mathematics in a variety of different ways and teachers assess accordingly. Problem solving and reasoning challenges are used to deepen learning. On completion of a piece of work, the teacher marks and assesses the work and uses this to inform future planning. Verbal feedback is given to the child in the lesson wherever possible to help guide their progress. Intervention is implemented on the same day, where possible. All children are encouraged to make judgements about how they can improve their own work and are always encouraged to strive for excellence.

Once the children complete a whole unit of work, the teacher makes a summary judgement of work for each child in relation to the National curriculum objectives.