

Dean Field School Mathematics Policy



Written by Fiona Oakes – September 2019.
Reviewed by Fiona Oakes - September 2020

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 powerful 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. Combined with our calculation policy and progression of skills document this ensures continuity and progression as well as high expectations for attainment in mathematics.

How we teach mathematics

At Dean Field we teach the National Curriculum order of objectives to ensure continuity and progression. We use the mastery approach. Each objective is taught through Varied fluency, problem solving and reasoning tasks. This is to ensure pupils develop a deep understanding of the mathematical concepts being taught. A range of high quality resources are used including I see maths and White Rose Hub resources. If a pupil fails to grasp a concept or procedure, this is identified quickly and same day intervention ensures pupils are ready to move forward in the next lesson.

Aims for pupils

- 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

Pupils are provided with a variety of opportunities to develop their mathematical skills, including:

- Group work.
- Paired work.
- Whole class teaching.
- Catch up sessions in KS1.
- Same day intervention in KS2.

Pupils engage in:

- Concrete, pictorial and abstract methods.
- Varied representations of questioning.
- Practical work.
- Investigational work.
- Problem solving.
- Mathematical discussion.
- Math's games and songs.

Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use mathematics in real contexts. Therefore, pupils at Dean Field are given the opportunity to develop their numeracy skills across the curriculum. There are carefully planned opportunities for measuring in science and technology. Properties of shape and geometric patterns may be studied in art and the collection and presentation of data is a skill which is practised in history and geography.

We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning. Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games.

Teaching approaches

Teachers use a range of teaching strategies to engage the children in maths and ensure progress is made by all children within a class; no set formula is used. A typical lesson would include:

- Both teaching input and pupil activities,
- A balance between whole class, guided grouped and independent work, (groups, pairs and individual work)
- Effectively differentiated activities/objectives and appropriate challenge.
- Fluency, reasoning and problem solving activities.

Sometimes the focus for the session is new learning. At other times pupils may be practising to master the application of a concept they have learned earlier. The focus of the session may vary for different children depending on their learning needs.

At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home. The school has invested in a subscription to the Times Table Rock Stars website which is an accessible learning platform that can be used to practice the rapid recall of multiplication and related facts.

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able.

Teachers endeavour to differentiate learning appropriately for high attaining, middle attaining and low attaining pupils – possibly with individual work for a SEND pupil at one end of the achievement spectrum, to individual work for a gifted pupil at the other.

Assessment

Formative Assessment

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and response in their teaching. The pupils' books are marked daily and this assessment is used to inform teachers' planning. Peer and self-assessment are also important tools which are used in some math's lessons in which the children will mark their own, or others, work with pink pen.

Summative Assessment

At the end of each half term, pupils take NFER tests which guide the teachers when assessing as they provide an age standardised score. This is recorded on our whole school assessment system, Target Tracker. We also share this information with parents' during parents' evenings and end of year reports.

Early Years Foundation Stage (EYFS)

EYFS children at Dean Field explore mathematical concepts through active exploration and their everyday play-based learning. They use the resource TenTown to deliver a mastery maths based scheme of work in Reception, teaching in depth one number every two weeks. This enables the concepts, methods and vocabulary to be embedded well before moving onto a greater number. It also ensures all mathematical concepts are revisited every two weeks to continually build on prior learning. Nursery introduce the scheme before the children enter Reception so they are comfortable, confident and familiar with the number characters and some of the teaching methods and vocabulary in which mastery maths is delivered. All children are taught key concepts and develop number sense using a hands-on, practical approach. EYFS practitioners provide opportunities for children to manipulate a variety of objects which supports their understanding of quantity and number. Pupils explore the 'story' of numbers to twenty and the development of models and images for numbers as a solid foundation for further progress. Practitioners allow children time for exploration and the use of concrete objects helps to support children's mathematical understanding through indoor and outdoor free play. Mathematics in the early years provides children with a solid foundation that will enable them to develop skills as they progress through their schooling and ensures children are ready for the National Curriculum.

COVID 19

At Dean Field school we are doing all we can to recover from the effects of Covid-19. We have adjusted our long term plans to ensure full coverage of the curriculum is taught, including any missed objectives from the last academic year. We have also introduced catch up sessions and high quality intervention.