



Maths Policy

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1. Introduction

Our vision at Denham Village School is for all children to enjoy mathematics and have a **secure** and **deep** understanding of fundamental mathematical concepts and procedures. We want children to see the mathematics that surrounds them every day and enjoy **developing vital life skills** in this subject.

Our Maths Policy reflects the aims of the school and outlines the agreed ways in which all members of the school community will contribute to a positive learning environment.

2. Aims

Our vision, which runs alongside The National Curriculum for Mathematics, aims to ensure that all children:

- Become **fluent** in the fundamentals of Mathematics
- Are able to **reason** mathematically
- Can **solve problems** by applying their Mathematical knowledge

3. Intent

The National Curriculum for Mathematics (2014) states:

'Mathematics is an interconnected subject in which children need to be able to move fluently between representations of mathematical ideas. Children should make rich connections across mathematical ideas to develop

fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to Science and other subjects.'

At Denham Village School, these skills are embedded within lessons and are developed consistently over time. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We believe in developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

See Appendix 1 for content domain progression of skills in Maths across the curriculum.

4. Implementation

At Denham Village School, planning is based on the National Curriculum (2014). The Herts for Learning *Essential Maths* programme of study is used to inform planning and support children's learning. The approach to the teaching of mathematics within the school is based on:

- **Daily Maths lessons for Years 1-6. Daily Maths carpet sessions and 2 full Maths lessons a week for Reception.**
- **A clear focus on direct, instructional, quality first teaching and interactive oral work within whole class, smaller ability groups and one-to-one settings.**
- **Continuous assessment for and of learning.**
- **Providing challenge for all children in order to accelerate learning.**
- **Providing children with opportunities to reinforce maths skills in other contexts and at home.**

Personalised learning ensures that suitable challenge is given to every child and that work is differentiated appropriately. As Denham Village School includes mixed-aged classes, teachers should be aware of the age-related expectations for the different year groups in their class and take responsibility in ensuring those age-related expectations are taught. The Herts for Learning *Essential Maths* planning is designed for mixed-age settings and can support teachers with meeting those expectations. Class teachers are responsible for the relevant provision of their own classes and individually develop or adapt plans which give details of learning objectives and appropriate differentiated activities. Planning should be evaluated and adjusted on a daily basis to better suit the arising needs of a class and individual pupils.

The National Curriculum for Mathematics (2014) states:

'The expectation is that the majority of pupils will move through the programme of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.'

Those who are not sufficiently fluent with earlier material should consolidate their understanding by being offered additional practise, additional support or by using concrete examples to secure learning before moving on. Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.

A Mastery Approach

A mathematical concept or skill has been mastered when a pupil can represent it in multiple ways, has the mathematical language to communicate related ideas and can independently apply the concept to new problems in unfamiliar situations. Mastery is a journey and a long-term goal, achieved through exploration, clarification, practise and application over time. The fundamental values of a Mathematics mastery approach are to:

- **Develop a growth mindset** where all children can achieve in mathematics. Children should view challenges as opportunities to learn. Mistakes are an integral part of any learning journey.

- **Build competency and fluency to secure the key foundations** of number skills before introducing children to more difficult concepts.
- **Deepen understanding before accelerating content coverage.** Depth is more important than speed. Key questioning is integral for developing and showing understanding.
- **Use concrete, pictorial and abstract representations (CPA) for all pupils.** Physical representations of mathematical concepts help all learners at all levels.

By using a mastery approach, children are able to **make connections, think creatively, problem solve and communicate their reasoning.**

Resources

All classrooms have a number of mathematical, age appropriate resources. Resources which are not used or required regularly are stored centrally and accessed by teachers at the beginning of a topic.

The use of Mathematics resources is integral to the concrete – pictorial – abstract approach and thus planned into teaching and learning. These resources are used by our teachers and children in a number of ways including:

- Demonstrating or modelling an idea, an operation or method of calculation. Resources for this purpose would include but are not limited to: a number line; place value cards; dienes; place value counters and grids; money or coins; measuring equipment for capacity, mass and length; bead strings; 2D and 3D shapes and/or nets; Numicon resources; multilink and Unifix cubes; Cuisenaire rods, clocks; protractors; calculators; dice; number and fractions' fans; individual whiteboards and pens and the interactive whiteboard and related software.
- Enabling children to use a calculation strategy or method that they couldn't do without help, by using any of the above or other resources as required.
- Using other areas of the school, such as the playground, when teaching length, area or perimeter.

See Appendix 2 for an extensive list of resources available to teachers.

5. Impact

Retention of skills

At Denham Village School, we ensure that children retain their learning by building on skills already taught, term by term and year by year. The Essential Maths planning revisits Mathematics topics from previous units and is aligned with the skills set out by the National Curriculum for Mathematics (2014). In EYFS, once all the Early Years outcomes have been covered throughout the year, teachers use their professional judgement to decide on what must be revisited as an area of weakness or consolidation of skills. Learning is evidenced by children's verbal responses, photographs and in written responses in Maths books (Years 1-6) and Maths assessments.

Assessment in EYFS

Children in Reception have a diagnostic style assessment, in September, which supports teachers with identifying gaps in knowledge. Intervention groups are then put in place to support children. During adult-led activities, observational notes are written which form part of ongoing assessment. Staff observations are then logged on to the online learning platform *Tapestry*. Parents are also encouraged to post observations on this platform but evidence must be approved by the Reception Lead. *Tapestry* then allows all adults who work with individual children to track observations, look for gaps in learning and inform planning so that more opportunities can be provided for those who need it. Child-initiated or independently completed work is used for making judgements. These teacher judgements are made at the end of every half term. This information is then entered on to Target Tracker.

Assessment in Years 1-6

Throughout lessons, children receive effective feedback through teacher assessment, both orally and through written feedback. Children are given opportunities to review their work with self and peer assessment. Teachers need to demonstrate their understanding of children's knowledge gaps and barriers to learning and plan how they intend to help them overcome these. Observations and careful questioning enable teachers to identify and address learning needs. Reflective tasks are used at the end of each lesson which allow for misconceptions to be addressed.

At the end of each blocked unit of work, the children also complete the destination questions that form part of the Herts For Learning *Essential Maths* planning. The outcome of this is used by the teacher to ensure that any identified gaps in understanding can be addressed before the next unit is taught. This also informs dialogue with parents and carers during open evenings, as well as the judgements made at the end of each half term.

Teachers administer a termly arithmetic paper and reasoning paper which specifically links to the coverage for that term. The results of these papers are used to identify children's ongoing target areas. They are also used alongside the end of unit assessments and outcomes of work, to inform the whole school tracking of attainment and progress for each child in line with each objective. This data, along with half termly teacher assessment is entered onto Target Tracker. It is then analysed by the Headteacher and Pupil Progress Meetings take place with the class teacher. These meetings have a sharp focus on tracking pupils against set targets and discussing the performance of groups of children and individuals. Potential interventions are discussed and actioned at this point.

Assessment data in maths is reviewed throughout the year to inform interventions and to also ensure that provision remains well-informed to enable optimum progress and achievement. End of year data is used to measure the extent to which attainment gaps for individuals and identified groups of learners are being closed. This data is used to inform whole school and subject development priorities for the next school year.

Further support

Children will naturally progress differently with their learning, however, any child who is underachieving in Mathematics, is given the opportunity to re-enforce their knowledge by practising and developing and consolidating their skills. Rather than allowing learners to fall behind, rapid intervention, where possible, should commence at the point when a weakness or gap in knowledge has been identified. These interventions can be undertaken by teachers or teaching assistants who work with the child and ideally, on the same day. Mathematics interventions should be individualised, and reviewed often in order to be highly effective. They should have an impact in order to successfully close gaps in learning.

Further support can take the form of working one-to-one or in a small group setting either during a whole class activity or in a separate setting. Children should not be excluded from whole class discussion but should discuss shared learning with their peers and feel valued as part of the class.

Interventions that offer further support include, but are not limited to: addressing misconceptions; reviewing the concrete, pictorial and abstract representations of mathematical concepts; pre-teaching key mathematical vocabulary before a new unit of work and reinforcing basic number skills in order to build on this knowledge in class.

6. Equal Opportunities and Inclusion

At Denham Village School, we are committed to ensuring the active participation and progress of all children in their learning. All children will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

The provision for children with special needs is detailed in the SEND Policy. SEND pupils may be supported by additional adults, different resources and differentiated activities. They may also complete additional activities outside of the mathematics lesson. We have high expectations of all children and strongly believe that all children are able to achieve in mathematics.

If a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be overseen by the Head Teacher/SENDCo, in collaboration with the class teacher and occasionally

with support of external agencies. Specific arrangements for the provision of children with SEND will be communicated to parents and carers during SEND reviews and through the children’s short support plans.

7. Role of the Mathematics Leader

At Denham Village School, the Mathematics subject leader will:

<p style="text-align: center;">Raise the Profile</p> <ul style="list-style-type: none"> • Set high standards for maths and lead by example. • Ensure working walls and maths displays are visible around the school. • Involve the school in ‘celebrations’ of maths through assemblies and awards. • Develop opportunities for parents/carers to become more involved in Maths education. 	<p style="text-align: center;">Continue Professional Development</p> <ul style="list-style-type: none"> • Organise and/or lead CPD and joint professional development. • Model lessons, as appropriate to new staff and peers. • Undertake lesson studies to provide coaching and feedback. • Observe lessons and learning in other school settings. • Take responsibility for managing own CPD by participating in external training, independent private study, engaging in educational research and scholarly reading and keeping up-to-date with teaching developments.
<p style="text-align: center;">Communicate</p> <ul style="list-style-type: none"> • Be willing to help any members of staff on the subject of Mathematics. • Work in close partnership with the Head Teacher to ensure the learning needs of all pupils in mathematics are met effectively. • Work with the SENDCO to ensure children who are falling behind are given appropriate intervention. • Keep parents/carers informed about curriculum updates or any other important information regarding Mathematics. • Discusses regularly with the Head teacher and the Maths Governor the progress of implementing the National Curriculum for Mathematics in school. 	<p style="text-align: center;">Monitor and Moderate</p> <ul style="list-style-type: none"> • Monitor progression and continuity of maths throughout the school through lesson observations, learning walks, conducting pupil interviews and regular monitoring of outcomes of work in Maths exercise books with a view to supporting colleagues and identifying children’s needs. • Monitor children’s progress through the analysis of whole school assessment data in order to plan whole school improvement in mathematics. • Organise and take part in internal and external moderation of children’s learning. • Keep the school’s policy for mathematics under regular review.
<p style="text-align: center;">National Curriculum</p> <ul style="list-style-type: none"> • Ensure teachers understand the requirements of the National Curriculum and support them with lesson planning. 	<p style="text-align: center;">Be responsible for Resources</p> <ul style="list-style-type: none"> • Organise, audit and purchase central and class-based Maths resources. • Ensure that teaching staff are aware of any online resources and software that can be used for teaching and learning.

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| <ul style="list-style-type: none">• Ensure teachers have an awareness of the progression of skills for Mathematics in Primary School.• Be aware of changes in the National Curriculum and government/county policy for Mathematics. | |
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Appendix 1 Content Domain Progression (see attached)

Appendix 2 Mathematics Resources

In school

Online resources and software

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMA_RY_national_curriculum - Mathematics 220714.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335158/PRIMA_RY_national_curriculum_-_Mathematics_220714.pdf)

<https://www.hertsforlearning.co.uk/news/essentialmaths>

<https://www.mathsisfun.com/>

<https://www.ncetm.org.uk/>

<https://nrich.maths.org/>