



DEEPING ST JAMES COMMUNITY PRIMARY SCHOOL



CURRICULUM POLICY FOR MATHEMATICS

Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Deeping St James Community Primary School.

The school's policy for mathematics is based on the National Curriculum for mathematics and the Early Years 'Development Matters' EYFS document.

This ensures continuity and progression in the learning and the teaching of mathematics. The policy has been drawn up by the mathematics subject lead, shared and discussed with all staff and has the full agreement of the Governing Body.

The implementation of this policy is the responsibility of all the teaching and support staff.

Purpose

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and curiosity about the subject.

At Deeping St James we follow the National Curriculum for mathematics for key stages 1 and 2; these programmes of study are set out year-by-year for each key stage. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. In the Early Years we follow the Early Years 'Development Matters' EYFS document.



Aims

We aim to develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to problem solve which will be an integral part of their future.

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.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils 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.

The expectation is that the majority of pupils will move through the programmes 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, including through additional practice, before moving on.

We aim for each child to:-

1. Have a positive attitude towards mathematics.
2. Have self-confidence in their ability to deal with mathematics.
3. Be able to work systematically, co-operatively and with perseverance.
4. Be able to think logically and independently.
5. Experience a sense of achievement regardless of age or ability.
6. Understand the appropriate underlying skills, concepts and knowledge of number, measurement, geometry and statistics.
7. Be able to apply previously acquired concepts, skills, knowledge and understanding to new situations both in and out of school.
8. Understand and appreciate pattern and relationship in mathematics.



9. Be able to communicate with peers and adults, ideas, experiences and questions, clearly and fluently, using the appropriate mathematical language.
10. Be able to explore problems using the appropriate strategies, predictions and deductions.
11. Have equality of opportunity regardless of race, gender, or ability.
12. Be aware of the uses of mathematics beyond the classroom.

For parents to:-

1. Be actively involved in their children's mathematical learning and to encourage the use of maths beyond the classroom
2. Understand and support the school's mathematics policy, calculations policy, times tables policy and home/school partnership.

Teaching Mathematics

Teaching time and Class Organisation

To provide adequate time for developing mathematical skills each class teacher will provide 5 lessons weekly within their timetable at Key Stage 1 and Key Stage 2. Teachers must use their expertise and professionalism in order to organise their lessons to meet the needs of the pupils and secure progress for all children. Within these lessons there needs to be a good balance between whole-class work, group teaching, paired work and individual practice. When appropriate, mathematics will also feature within other subjects so that pupils have the opportunity to develop and apply key mathematical skills.

Features of Lesson

Features that we would expect to see in a maths lesson are:

◆ Maths Starter

This will involve work to rehearse, recall, refresh, refine, read and reason mathematical skills. Children may be working as whole-class or in fluid groups with the teacher/teaching assistant.

◆ Main Teaching and Learning Focus

This will include both teaching input and pupil learning tasks which will be a balance between whole class, grouped, paired and individual work. Children need to be working appropriately for their individual needs based on analysis from the assertive mentoring assessments.

◆ Plenaries

Mini plenaries will be implemented throughout the lessons to ensure and develop children's understanding further and allow for the progression through activities to develop at the appropriate pace for each individual child. Final plenaries will be planned for and used effectively to consolidate, assess and take learning forward.



Out-of-class work and homework

The mathematics lessons will provide opportunities for children to practise and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning.

Our home/school partnership sets out the expectations for support with key aspects of mathematics at home throughout each academic year. Parents receive a laminated sheet at the beginning of each academic year at DSJ which sets out the mathematics support required at home. This is based on key skills that the children require to support them through the mathematics curriculum in which parental support is crucial.

Additional homework tasks in Key Stage 1 and Key Stage 2 will be completed through individual Learning Logs where the children will be given opportunities to demonstrate what they have learnt during a sequence of lessons; when this is deemed appropriate by the teacher. Learning Logs will be used by class teachers as a tool to support with Assessment for Learning and implementation of future planning.

Links between mathematics and other subjects

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts. At DSJ we encourage the children to be 'Mathematicians' and ensure that they understand when these skills are required within other curriculum areas.

School and Class Organisation

How we cater for pupils who are more able

More able pupils will be taught with their own class and stretched through differentiated group work and greater depth challenges. When working with the whole class, teachers will direct some questions towards the more able to maintain their involvement and extend and challenge them. Occasionally special arrangements will be made for an exceptionally gifted pupil e.g. they may be taught with children from a higher age range or may follow an individualised programme with more challenging problems to tackle.

How we cater for pupils with particular needs

Teachers will involve all pupils through differentiation and provide necessary support through use of practical resources (concrete apparatus), ICT and adult support, if available.

Pupils with special educational needs and individual education plans

Children who have Special Educational Needs will gain access to the Mathematics Curriculum through the implementation of their Provision Plan and targeted support and interventions by classroom teaching assistants. Teachers will aim to include all



pupils fully in their mathematics lessons. All children benefit from participating in watching and listening to other children demonstrating and explaining their methods. A pupil whose difficulties are severe or complex may need to be supported with an individualised programme in the main part of the lesson which is separate to the rest of the class.

How we work in the Foundation Stage

In Reception, mathematics is taught throughout the curriculum in a practical and exciting way. The children are encouraged to explore Number, Numerical Patterns and Shape, Space & Measure in their independent choosing time, with a maths specified learning zone in the classroom. The EYFS team plan teacher-led sessions progressing through the relevant development matters before working towards the ELGs. Observations are recorded on 'Tapestry' as a developing learning journey for individual pupils and as pupils progress through the year they also complete maths focussed work in books, in readiness for the transition to NC learning.

Mathematics in the Foundation Stage is based upon early years educational theory that mathematical concepts can be promoted everywhere especially through the open-ended opportunities within children's play. Adult led teaching opportunities and observations of children's independent understanding in mathematics are given weekly based upon the Early Learning Goals. By the Summer Term the children will experience mathematical learning which is similar to Year 1 in readiness for transition.

Displays and Resources

In each classroom there should be a mathematics learning wall which is a tool to support children to grasp mathematical concepts. Displays should include relevant mathematical content as set out in the criteria for each year group set by the school mathematics curriculum group.

Learning resources are differentiated to match the needs of the pupils and purchased according to requirements and within budgetary constraints. Each class is resourced with both practical and visual mathematics resources. These can be found in the class areas. Other Maths equipment can be found centrally in the Maths Resource Cupboards.

Information and Communication Technology

All staff are encouraged to use the school's ICT facilities to enhance the teaching and learning of mathematics as well as to motivate children's learning.

ICT in mathematics will involve Interactive Whiteboards, computers and audio-visual aids. They will however only be used in mathematics lesson when it is the most efficient and effective way of meeting the learning targets.



Planning

Planning for children in EYFS is taken from the Early Years 'Development Matters' and the ELG EYFS document. The teacher in EYFS plans mathematical opportunities onto weekly planning formats and uses a variety of assessments to inform future teaching and learning opportunities.

For key stages 1 and 2 the teachers have established Long Term Plans for their year group ensuring that there is continuity and progression through the mathematics curriculum as well as ample opportunity for consolidation and reinforcement. This progression is based on the knowledge the children have gained from previous year groups to build on their mathematics skills as well as the professional knowledge of the teachers to ensure that the curriculum is progressive through the units of mathematics.

The school is part of the PiXL Family and uses this for assessment and diagnostic purposes. Teachers follow the PiXL Assessment calendar and complete diagnostic tests which serve as formative assessment to highlight aspects of mathematics for teaching and learning. Teachers use these assessments and highlight their own tracking sheets for medium term planning purposes to ensure coverage over the national expectations throughout the year. Theses are also used to support 'catch-up' for pupils who need some extra support in specific areas of the curriculum and these are addressed using PiXL therapies.

To support progress through aspects of mathematics teachers will use this approach to planning and assessment during short term planning of mathematics:

Assess – Plan – Teach – Practise – Apply – Review

Before each unit of work teachers use pre-assessment sheets with their class to highlight areas of need; these are crucial for the planning of that teaching and learning sequence. Children are then grouped according to their needs and ability on specific areas of mathematics to ensure each individual is accessing the relevant teaching and learning for this subject.

Within short term planning learning intentions need to be specific demonstrating the progression needed to meet the curriculum end of year expectations for the specific area of mathematics. This will enable the class teacher to follow a clear and systematic teaching sequence, where input and activities are differentiated by considering which parts of the learning journey individual children are ready for.

Where children are working significantly above the objective the majority of the class need to work towards the teacher will ensure that these pupils have opportunities to deepen their understanding through greater depth challenges and problems using a variety of resources available.



Where children are working significantly below the objective the majority of the class need to work towards the teacher will ensure that plans and resources for lower-age groups will be available to support the progress for these children.

Planning, where possible, should involve real life contexts for maths, where children are problem solving with a purpose in mind.

Progression in Calculation

We have a policy for progression in calculation methods to ensure continuity and consistency throughout the school in line with the New National Curriculum 2014.

Assessment

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Teaching a unit of work will need careful initial and ongoing planning, informed by an assessment of children's learning. The cycle that supports this process in mathematics is the same as that set out in the planning section:

Assess – Plan – Teach – Practise – Apply – Review

Short-term assessments of pupil work and progress is on-going by the class teacher and informs future planning. Teachers use pre-assessments prior to the planning, teaching and learning of a unit in mathematics and post-assessments at the end of each unit to show individuals progress. Teachers mark work in mathematics in line with the school marking policy. Teachers annotate daily planning with relevant assessments and alterations to the unit of work.

Medium-term assessments will take place based on the PiXL Assessment Calendar – mainly 3 times a year for Y2-Y6 and 2 times a year for Y1. These assessments are taken from the PiXL materials and are specific to the stage of learning relevant to the child's year group/specific educational needs.

Long-term assessments will take place at the end of Term 2, Term 4 and Term 6. Summative data is taken from the PiXL materials and is used alongside teacher assessment of individuals' progress towards the end of year group expectations to track pupils progress through the end of year group expectations for mathematics.

A whole school assessment system is in place which tracks the progress of all children in the school and is used as an informative tool by the headteacher and other school leaders.



Statutory Assessments take place for children at the end of Year 2 and Year 6 in accordance with the current government guidelines.

Self-Assessment

Children are involved in assessing their own mathematics learning. This follows the school guidelines for expectations in each year group and includes:

Traffic Lights – How well did they understand their learning? (red/yellow/green)

Verbal Comments – Children may be asked to discuss/comment on their learning through discussions or pupil interviews.

Peer assessment- peers thoughts will be recorded periodically.

Monitoring and Evaluation

The monitoring of the standards of children's work and the quality of teaching and learning in mathematics is the shared responsibility of the Head Teacher, S.L.T and subject lead.

- Teachers are observed in mathematics and learning walks take place to monitor the subject teaching across the school.
- Book/Work Scrutiny takes place by the subject lead at least 3 times a year.
- Pupil interviews for this subject are conducted by the subject lead at least 3 times a year.
- SLT hold 3 pupil progress meetings annually in which the progress of mathematics is discussed.

The work of the subject lead also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

There is a designated member of the school governing body who communicates with the maths subject lead to keep informed on the subject in school ensuring that they have an overview of the teaching of mathematics in the school. The mathematics subject lead also attends 2 governors meeting a year to present information and answer any questions in relation to mathematics in school.



This policy will be reviewed by all staff and governors on

The policy was agreed by the Governing Body on:

23rd October 2020.

Signed:

Headteacher

Chair of Governors

This policy must be read and used in conjunction with the:

- Calculation Policy.
- Times Table Policy
- Marking policy.
- National Curriculum Mathematics government documentation.