Gedney Hill CoE Primary and Shepeau Stow Primary Schools Federation

Mathematics Policy

The aim of this policy document is to provide guidance and clarification of the teaching of Mathematics and to ensure curriculum continuity and pupil progression throughout the Federation.

> *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 for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.*
>
> (National Curriculum 2014)

The aims of the 2014 National Curriculum are for our pupils to:

- Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems; breaking down problems into simpler steps and persevering in answering.
- The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non-statutory guidance. The EYFS Framework in relation to mathematics aims for our pupils to:

- Develop and improve their skills in counting
- Understand and use numbers
- Calculate simple addition and subtraction problems
- Describe shapes, spaces, and measures.

The purpose of mathematics in our Federation is to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills • an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and collaboratively with others

- confident communication of mathematics where pupils ask and answer questions, openly share work, use mathematical vocabulary and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation.

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching & learning.

Breadth of study

Careful planning and preparation ensure that throughout the Federation children engage in:

- practical activities and games using a variety of resources
- use of pictorial and manipulative resources to support understanding, fluency and learning
- problem solving and reasoning tasks to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning
- open and closed tasks
- a range of methods of calculating e.g. mental (with jottings), formal written methods and the use of a calculator.

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers' planning and organisation

Each class teacher is responsible for the mathematics learning in their classroom.

Lessons should involve:

- clear focused Learning Objectives (To know …) that will build upon previous learning and ensure progression
- links to every-day life and the world around us
- an emphasis on embedding fluency
- the opportunity to reason and problem solve
- clear use of the Maths Working Wall to support learning

In EYFS, the teacher will ensure that children are given the opportunity to build upon their previous knowledge and explore their next steps both within adult guided activities and child-initiated activities. Opportunities for mathematics learning will be available in continuous provision, both inside and outside, and adults will question children to move their learning forward.

Long Term Planning

Long term planning for mathematics taught across the Federation is provided by The National Curriculum for Mathematics 2014; Collins: Busy Ants Scheme and the Early Learning Goals (Number, Shape Space & Measure).

Medium Term Planning

Teachers in Year 1 to Year 6 use the Collins 'Busy Ants' Scheme as a starting point for their mathematics teaching and learning planning. These plans can be supplemented, when needed, to include opportunities from different resources such as White Rose Maths, NCETM and Nrich.

To ensure a progression of skills, concepts and knowledge teachers will use:

- Busy Ants Documents (including progression mapping)
- Federation Calculation Policy
- Federation Key Representations for Conceptual Understanding
- Federation Assessment Documents

The Busy Ants SOW is also used as the base for EYFS planning to complement the continuous provision.

Short Term Planning

- Lessons are planned in line with the Teaching and Learning and Assessment Policy using the Federation Termly Mathematical Development Planner, and are monitored at intervals by the Maths Lead and SLT.
- All classes have a daily mathematics lesson where possible. In key stage one lessons are 45-60 minutes and in key stage two at least 60 minutes.
- Plans are saved on the shared drive every Monday morning and can be reviewed by the SLT and Subject Lead during monitoring.
- Plans are a shared resource to support CPD.

Lessons

In all lessons, Learning Objectives and Success Criteria are clearly displayed and discussed. The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics. Lessons involve elements of:

- Instruction – giving information and structuring it clearly
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays which support fluency
- Explaining, reasoning and illustrating – giving accurate and well-paced explanations
- Questioning and discussing
- Concrete, pictorial and abstract representations
- Consolidation
- Reflecting and evaluating responses – identifying mistakes and misconceptions, and using them as positive teaching and learning points
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

Special Educational Needs & Disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's Active Learning Mats and Class Provision Mapping will incorporate suitable objectives from the National Curriculum for Mathematics and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 or small group basis outside the maths lesson.

Maths focused intervention across the Federation helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the class teacher and/or the SENCO and Assistant to the SENCO. Within the daily maths lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

Equal Opportunities

Positive attitudes towards mathematics are encouraged so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. This policy is in line with the school's Equal Opportunities Policy. The aim is to ensure inclusive lessons where everyone makes progress and gains positively. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons as well as planned support from teaching assistants and other adults to support children's learning.

Pupils' Records of work

Children are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and efficient method. This could be mental strategies and their own jottings or more formal written methods. Children's own jottings to support their work is encouraged throughout all year groups.

Some learning (when no formal recording is made in exercise books, but concrete resources have been used) will be recorded through photographs in a Class Mathematics Book.

Marking

Marking of children's work is essential to ensure they make continual progress. Work is marked against success criteria, in line with the Federation Marking Policy. Feedback can include challenge, application, next steps, support or consolidation as appropriate. Developmental marking will be used at least twice a week for each child. Children will self-assess their work at the end of every lesson. They will be given time to read teachers' feedback and make corrections or improvements. Time for responses to marking are made as close to the marked work as possible, ideally at the start of the next lesson or as morning work the following day. Some pieces of work in mathematics can be marked by children themselves: exercises involving routine practice. This will be with support, guidance and monitoring from the teacher or teaching assistant.

Assessment for Learning

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through:

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated and amended in red in light of these assessments.

Role of the Maths Lead:

- To lead in the development of mathematics throughout the Federation.
- To monitor the planning, teaching and learning of mathematics throughout the Federation.
- To help raise standards in mathematics.
- To foster a positive engagement with maths including pupil voice.
- To provide teachers with support in the teaching of mathematics.

- To work alongside the SLT to provide staff with CPD opportunities in relation to mathematics within the confines of the budget and the School Improvement Plan.
- To monitor and maintain high quality resources.
- To keep up to date with new developments in the area of mathematics.

Related documents and policies:

Busy Ants 'Teachers Folders' and text books

Federation Calculation Policy

Federation Key Representations for Conceptual Understanding

Teaching, Learning and Assessment

Marking and Feedback

SEN and Inclusion

Curriculum Intent

Review: September 2024