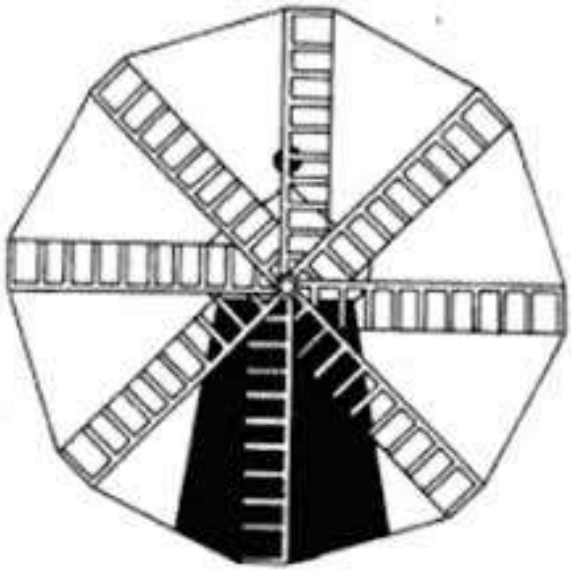
Mathematics Policy

Heckington St Andrew's Church of England Primary School

Respect + Responsibility + Relationships + Resilience + Reverence
Five Rs = Ready for Life
"I have come that they may have life, and have it to the full." John 10:10



Approved by: Curriculum & Standards Committee	Date: 12.03.2019
Last reviewed on:	
Next review due by: March 2023	

Introduction
Mathematics is a core subject in the National Curriculum. At Heckington St Andrew's we aim to inspire, engage and motivate our children to ignite a passion for learning so that they can succeed and reach their full potential. We provide a creative, personalised and nurturing environment where children can explore, discover and learn through real life experiences to build the foundations for a lifelong love of learning.

Mathematics develops logical reasoning, problem solving skills and abstract thinking. It is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. Mathematics is important in everyday life and provides a way of viewing and making sense of the world. The skills of mathematics should be taught in a context that will provide purpose, meaning and enjoyment. 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.

Aims
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.

Our mathematics curriculum is based on the Programmes of Study found in the National Curriculum (2014)

Approaches
Since September 2018, Years 1, 2, 3, 4 and 5 have followed the Maths No Problem scheme. Year 6 are using the scheme when appropriate alongside additional material. This approach will ensure a consistent approach to teaching mathematics across our school.

We are following a mastery curriculum whereby we believe that all children can achieve. The school uses a variety of teaching and learning styles in mathematics during each lesson. Groupings in classes are flexible and pupils will work in guided groups, with a partner and independently.

The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention. The questioning and scaffolding individual pupils receive in class as they work through problems will differ and pupils who grasp concepts rapidly

are challenged through more demanding problems which deepen their knowledge further.

Practice and consolidation play a central role to mathematics learning. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts in tandem. Teachers use precise questioning in class to assess conceptual and procedural knowledge and identify those requiring intervention. Teachers ensure that concepts are modelled to pupils using multiple representations. This ensures that procedural and conceptual understanding is developed simultaneously.

Time allocation
Every class in Key Stages 1 and 2 has an hour of mathematics on a daily basis, although this may be spread across the day as appropriate.

In the EYFS, mathematics is carefully planned so that it permeates all aspects of the child's day.

Continuity and Progression
Continuity and Progression is ensured by following the Curriculum Guidance for the Foundation Stage, National Curriculum 2014 and the Programmes of Study for Mathematics.

Additional support and intervention
The needs of children requiring additional support for their Literacy will be discussed by the Mathematics Subject Leader, Special Needs Coordinator and the class teacher.

Where necessary, intervention support will be put in place to aid progress, for example:

- 1st Class@Number;
- Success@Arithmetic: Number Sense;
- Success@Arithmetic: Calculation;
- 1:1 Tuition;
- Booster Classes.

Equal Opportunities
All children have an entitlement to participate fully in mathematics, regardless of gender, race, age or ability, in accordance with the school's Equal Opportunities Policy.

Children whose second language is English receive appropriate support as necessary.

Planning
Planning is based on the National Curriculum 2014. Teachers use the Maths No Problem scheme to support their planning involving the three key aims of fluency, reasoning and problem solving. Topics are taught in units of work that focus on key concepts and allow children to gain deep understanding. Supported by Maths No Problem, lessons and resources are crafted carefully to foster deep conceptual and procedural knowledge. Teachers are encouraged to plan their units of work in a way that supports the school's creative curriculum and good cross-curricular links.

Planning shows the objectives to be covered for each unit and these are taken from the Programmes of Study in the National Curriculum 2014. Teachers plan to include a range of teaching strategies ensuring a balance between concrete, pictorial and abstract approaches. At the planning stage, teachers consider the key learning points, small steps, variation questioning and suitable challenge questions. Plans are shared with teaching assistants and are annotated and adapted in the course of a unit in response to on-going assessments.

Daily evaluation takes place to inform further planning and teaching. The plans are monitored on a regular basis by the Headteacher and the Mathematics Subject Leader.

Lesson Design

Following Maths No Problem, we aim for lessons across all classes to have a consistent approach to mathematics teaching every day. Each maths lesson is divided into three parts; an anchor task, guided practice and independent work.

- Anchor task – the whole class have a question to answer or a problem to solve relating to the lesson objective. During this part of the lesson there is use of talk partners and teacher and/or teaching assistant questioning and scaffolding. The children are encouraged reflect on their prior learning, make connections and to use more than one way to solve the task and explain their ideas. There will then be class discussion about the possible methods that could be used.

- Guided practice – allows children time to practise and consolidate their new learning before children move on to the independent task. During this time, teachers and teaching assistants can assess children's understanding and support appropriately.

- Independent work – once children are ready, they will work independently in their workbook. Tasks in the workbook are varied and have a range of difficulty in order to develop higher-order thinking skills. Once children have mastered the concept, they use their reasoning and problem solving skills to develop their depth of learning.

- Maths journal – these are used for children to record their mathematical thinking during the anchor task and guided practice. Additionally, when children are completing appropriate reasoning and problem solving challenges, they record their mathematical thinking here. They may also be required to write written responses to explain their thoughts as well as showing their mathematical thinking.

- Manipulatives – children have access to a variety of different manipulatives within their classroom. We use a concrete, pictorial, abstract approach to the teaching of mastery mathematics following Jerome Bruner's theory that learning occurs by going through three stages of representation. Bruner's Stages of Representation are: enactive (action-based), iconic (Image-based) and symbolic (language-based). Practical resources and pictorial representations are used to support children when exploring concepts by exposing the underlying structure of mathematics.

Early Years Foundation Stage (EYFS)
Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupils' interests and current themes and will focus on the expectations from Development Matters / Early Years Outcomes. The mastery approach to mathematics embraces the Characteristics of Effective Learning as stated in the Development Matters document.

As the pupils progress through, more focus is placed on representing their mathematical knowledge through more formal experiences.

Pupils will be encouraged to record their mathematical thinking when ready. Children should use appropriate and relevant vocabulary and should be actively encouraged to discuss their maths and reason mathematically. Children should use well-chosen concrete and pictorial representations.

Throughout the year, the school uses Tapestry, an online journal to record, track and celebrate maths learning in the Early Years education.

Assessment
Assessment is at the heart of the teaching and learning process. In the EYFS, teachers assess children's learning using the Foundation Stage Profile. Most of the observations for assessment are based on those activities that children initiate and engage with independently across the range of provision.

Teaching should be objective-led, based on prior attainment, and assessment should inform future planning.

Statutory end of Key Stage tests are used, together with optional NFER tests in Y1, Y3, Y4, and Y5.

All teachers will make assessments and note children's progress on a day-to-day basis and, where appropriate, show progress within each child's individual Learning Journey. At the end of each unit we use end of chapter reviews in the Maths No Problem scheme. Each term, assessments of mathematics are recorded in Learning Journeys, drawing on a range of evidence to inform their judgements.

All teachers will ensure that progress is regularly recorded and monitored. These assessments, alongside Learning Journeys, will be used to inform target setting.

Feedback on Maths
Teachers mark writing regularly in accordance with our Feedback and Marking policy.

Staff Development
The Maths subject leader will attend any appropriate training courses and disseminate information to other members of staff as appropriate.

Professional development for teachers and support staff will be identified and, where possible, addressed.

Parents and Carers
The support and encouragement of parents and carers will be sought and valued. Parents and carers will be helped to understand the school's Mathematics Policy so that they can work in partnership with the school in developing their child's literacy skills.

The practising of times tables and other mental maths may be set in accordance with the Homework Policy.

In addition, parents also have a termly opportunity, to meet with the staff to discuss progress and to see work.

Parents receive an annual written report at the end of the school year. This includes details of their children's progress and areas for development.

Monitoring and Evaluation
In order to monitor standards and progress the following systems are in place:

- At Pupil Progress meetings the class teacher and Mathematics Subject Leader/ Headteacher monitor and evaluate the progress of children in Mathematics
- The Mathematics Subject Leader is given time to observe lessons and give oral and written feedback, and also to see children's work.
- Staff meet regularly to engage in whole school moderation as well as moderation with other schools in the area.
- The progress of pupils with Special Educational Needs (SEN) is reviewed with the Special Needs Co-ordinator (SENCO) each half term.
- The school's Mathematics Action Plan is part of the School Development Plan – this is reviewed and updated annually by the Mathematics Subject Leader and Senior Leadership Team.

The Role of the Subject Leader
The role of the Mathematics Subject Leader is defined in the job description.

Success Criteria
This policy will be followed successfully if the following criteria are observed:

- A balanced mathematics curriculum is delivered, which accords with the National Curriculum 2014 requirements.
- The learning environment is enhanced through the use of and celebration of mathematics.
- Most children enjoy, and feel themselves to be able to achieve in this subject area.

Drafted by: Cassy Coggins, Subject Leader for Mathematics (February 2019)

Reviewed by: Curriculum and Standards Committee

Approved by the Curriculum and Standards Committee: 12.3.19

This policy will be reviewed in: March 2023