Mathematics Policy

March 2024

Approved by the Governing Body Strategy Group 14/03/24

This Policy is due for renewal in

Term 4 2025-26

MATHEMATICS POLICY

OF

GODINTON PRIMARY SCHOOL

SECTION ONE: INTENT

INTENT (as displayed on our school website)

Mathematics is essential in everyday life. We have a strong desire for all children at Godinton Primary School to develop an ability to solve problems, to reason, to think logically and to work systematically and accurately– all valuable skills that help children to make sense of the world around them. At Godinton Primary school, we believe all children should enjoy their maths lessons and that all children can achieve in maths. Offering our children a rich and progressive mathematics curriculum is at the forefront of everything we do. We use a range of learning strategies to allow all our children access and enjoy maths and support them to become confident mathematicians who are able to use high quality mathematical dialogue in the classroom. Throughout the school, we use our mastery curriculum to develop fluency and deepen thinking; moving through different representations of mathematical ideas so that our children see mathematics as an interconnected subject. Children are guided and supported in developing number skills, graph work and skills relating to shape and measure. We want our children to see the importance and purpose mathematics has in their everyday lives.

As part of our Guiding Stars curriculum, Maths is the leading light subject for '**Problem Solving**'.

Within our Maths curriculum, the children learn that there is sometimes one answer or multiple answers to a problem. They use a wide variety of skills to investigate and bring their skills and knowledge together to find solutions, exploring all angles. The children identify where they need to start and finish when solving a problem and use the information they already have and look for what else they have to find out. They learn how to select the right operational procedure and if they are not sure, they are guided in how to use a trial and improvement approach. The children understand the importance of checking answers to see if things look right and re-calculate if need be. They make comparisons and use these to help find answers.

SECTION TWO – TEACHING AND LEARNING STYLES

2.1 The school uses a mastery approach for the teaching and learning of Mathematics. Teaching for mastery (T4M) and is now actively delivered across the whole school from Reception to Year 6. The mastery approach to Mathematics places greater emphasis on broadening our pupils' understanding and experiences of Mathematics in order to provide

them with a deeper understanding of concepts as opposed to moving on to the next stage too quickly. Teaching for mastery also allows children to make greater connections to other areas of Mathematics, through conceptual and procedural fluency as well through the variation in models and representations.

2.2 There are daily Mathematics lessons delivered in every year group, largely involving a whole-class interactive teaching approach, with opportunities for group, paired and independent learning. Tasks are tailored discreetly to be inclusive, although there still may be a need for specific differentiation where appropriate. The children have access to manipulatives and resources in order to scaffold and enhance their knowledge and understanding. We use a three-step approach to the majority of subject areas in Mathematics- Make it, Draw it, Prove it:

- Make it: Children use manipulatives and concrete resources to create a specific concept (E.g. Base ten to show place value or counters to show arrays.)
- Draw it: Children record the concept pictorially on individual white boards or in their Maths jotters (E.g. tens and ones in a place value grid or dots to represent fractions of amounts.)
- Prove it: Children use more abstract methods to explain their learning and provide written/ drawn evidence (E.g. Written equations or reasoning sentences.)

2.3 We focus on and encourage the use of accurate mathematical vocabulary and language from the offset to avoid misconceptions and to aid fluency when progressing through the school. The use of stem sentences and sentence hooks are used to support the children to grasp knowledge in a timelier manner, to secure their learning and to provide another strategy to aid their understanding of more abstract concepts. In lessons, mathematical talk is used and allowed comprehensively; talk partners, discussion opportunities and open-ended questions are all part of daily practice.

There will continue to be a focus on mathematical fluency, written calculation methods and the recall of multiplication and division facts in line with current assessment guidelines and expectations.

Children use ICT in Mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

2.4 In all classes, there are children of differing mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child where necessary. We achieve this through a range of strategies – in some lessons through differentiated group work and in other lessons by organising the children to work in pairs on open-ended problems or games. In Year 1 to 5 children are taught in whole class mixed ability groups for Mathematics lessons every day. In Year 6, there are additional groups to help support the knowledge and understanding of the KS2 curriculum before transition to secondary school.

~~We use~~ Teaching assistants support children in class and help to ensure that the work is matched to the needs of individuals. Provision maps are drawn up by the class teachers and are shared with parents to inform them of the interventions that are taking place to support

the children's learning. Teaching assistants also deliver additional 'top-up' sessions to address misconceptions or deepen a focus group's understanding of a concept- these ~~are~~ provisions are planned and guided by the class teacher.

SECTION THREE – CURRICULUM STRUCTURE AND PLANNING

3.1 Our Curriculum implementation is below. This information is also provided on our school website:

IMPLEMENTATION

At Godinton Primary School, Maths is taught on a daily basis in mixed ability classes. We follow the teaching sequence outlined by the White Rose Maths Hub schemes of learning. This ensures that a coherent, consistent approach is adopted in all year groups. In Upper School, we have adopted the use of the DFE approved scheme of Power Maths, which is closely aligned to White Rose Schemes of learning. Both of these resources provide teachers with notes and guidance on how to enhance their teaching of the subject along with key vocabulary, questions and discussion and teaching points. The White Rose Maths Hub schemes of learning reflect the content of the Foundation Stage Early Learning Goals and the National Curriculum for Maths. Although as a school we have opted to use the resources mentioned, we also ensure that our staff feel confident in being selective in the resourcing they use for a lesson or are confident to spend longer on a specific skill or concept if they feel that the children in their class would benefit from this.

The curriculum is broken down into small manageable steps in order to ensure that each lesson has a clear focus and helps children understand concepts by following a carefully planned sequence of lessons. This reduces the cognitive overload that can occur when too many concepts are covered at once and ensures that each lesson contributes to the long-term goal. Within each lesson, children have the opportunity to acquire, practice, apply and deepen their knowledge and skills as appropriate. Pupils who understand concepts quickly are challenged by being offered rich and sophisticated problems to deepen their understanding. Concepts are revisited over time so that children can reinforce them and embed them into their long- term memory.

When introduced to a new concept, children have the opportunity to follow the concrete – pictorial – abstract approach. Concrete objects and manipulatives help them understand what they are doing. Alongside these, children use pictorial representations that can be used to help reason and solve problems. Concrete and pictorial representations then help support children's understanding of abstract methods. During maths lessons, children will also have the opportunity to develop their reasoning skills, orally and written. When reasoning, children are encouraged to support their reasoning with mathematical proof.

All children are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. Children who do not make expected progress are identified and intervention programmes are put in place to support these children. This includes same day intervention that enables children to access the learning planned for the following

lesson. Teachers use assessment for learning methods to ensure that the work set for children is matched to ability.

At Godinton Primary, weekly maths homework is set using an online platform called Mathletics. Homework set is an opportunity to practice concepts taught in class each week. Alongside weekly homework, children are encouraged to learn number bonds and times tables on a regular basis.

3.2 We carry out the curriculum planning in Mathematics in three phases (long term, medium-term and short-term). The key objectives are drawn from National Curriculum and are supplemented by the White Rose overview. Staff amend these as appropriate to ability of the children they teach. Class teachers also use our school's progression of skills document and our visual calculation policy as reference and planning tools.

3.3 Our medium-term Mathematics plans give details of the main teaching objectives for each term and define what we teach. They ensure an appropriate balance and distribution of work across each term. These plans are reviewed by the subject leader and Assistant Head. The medium term plans are published on the school website to enable parents to access them. Paper copies can be made available upon request.

3.4 It is the class teacher who completes the weekly flipchart plans for the teaching of Mathematics. Flipcharts contain the learning objectives for each lesson and give details of how the lessons are to be taught, including whole class examples. The class teacher keeps these individual plans and they are also held centrally on the school network to enable monitoring by the SMT and the subject leader to take place.

SECTION FOUR – FOUNDATION STAGE

4.1 The EYFS framework is structured very differently to the National Curriculum and it is organised across seven areas of learning rather than subject areas. In the EYFS, Maths is a specific area of learning and is made up of two components: **number and numerical patterns.** Maths also features in the prime area of **Communication and Language.**

Our EYFS maths curriculum is based upon a desire for the children to enjoy being mathematical – No one is bad at maths! Opportunities for mathematical learning can happen anywhere and are practical wherever possible. What matters is building our children's confidence and their willingness to have a go, whether at counting, construction or shape puzzles. As supportive relationships are so important, it is imperative for us to find activities that children not only enjoy, but that adults can enjoy too, and base our learning around this. Recognising the maths in everyday activities helps our children's mathematical learning even further. When playing and in everyday routines, such as having a snack, children can learn lots of maths. Our children are given plenty of time to freely explore the mathematical resources and activities on offer; to pursue their own interests and to make sense of what they see, hear and are taught.

Since September 2022, Reception have also been talking part in the Mastering Number project. The project's intention is to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. It has been an

exciting addition to our maths curriculum and has pushed the children subitising, composition, comparison and counting skills.

It is our aim that when children at Godinton Primary School finish their first year at school and move into Year 1, they will be able to:

- Have a deep understanding of number to 10, including the composition of each number
- Subitise (recognise quantities without counting) up to 5
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts
- Verbally count beyond 20, recognising the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
- Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

SECTION FIVE – CONTRIBUTION OF MATHEMATICS TO OTHER CURRICULUM AREAS

5.1 English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

5.2 Computing

Children use and apply Mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

5.3 Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the

spending of money. The teaching for mastery approach also helps to develop the children's resilience and perspective skills.

5.4 Spiritual, moral, social and cultural development

The teaching of Mathematics supports the social development of our children through the way we expect them to work, interact and communicate with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

SECTION SIX – TEACHING MATHEMATICS TO CHILDREN WITH ADDITIONAL EDUCATIONAL NEEDS

6.1 We teach Mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with additional educational needs. Work in Mathematics takes into account the targets set for individual children including those with special educational needs as identified on provision maps.

6.2 Children with English as an additional language (EAL) are identified in school. They will be supported in their learning, according to their level of need by teachers, teaching assistants or by the EAL teaching assistant.

SECTION SEVEN – ASSESSMENT AND RECORDING

7.1 Teachers assess pupil's progress in Mathematics. On a daily basis this is through marking children's work, questioning and adapting plans from one day to the next.

7.2 At the end of every unit, class teachers administer an end of block assessment, from the White Rose resources, in order to gain an overview of the children's understanding of that particular area. Additional input and/or interventions may be planned as a result of this. In ~~Year 2 and~~ 6, other assessments may be used to guide teacher assessment in line with end of key stage expectations.

7.3 At regular intervals throughout the school year, teachers assess pupils using the White Rose Mathematics assessments. A judgement is made about the children's attainment in relation to year group expectations. A gap analysis is undertaken following these assessments to monitor and track areas of weakness for further focus and reinforcement.

7.4 Children are given next steps in Mathematics three times a year. Pupils with Special Educational Needs will have more personalised and end of key stage targets.

7.5 Children's mathematical attainment and progress is discussed at pupil progress meetings three times a year with the Headteacher and Assistant Headteachers. We ensure that the

Assistant Head (Inclusion) is present at all pupil progress meetings. Children identified as under-achieving or failing to make sufficient progress will form the focus of the meetings.

7.6 Regular assessment will identify those pupils who require additional intervention and support. Teachers outline these interventions on a provision map and these are sent out to parents three times a year.

7.7 Children will take home a school report three times per year that provides information for parents about their attainment, progress and effort against year group expectations.

SECTION EIGHT – USE OF RESOURCES (INCLUDING MANIPULATIVES)

8.1 There is a range of resources available in classrooms to support the teaching of Mathematics across the school. All classrooms are resourced with a range of appropriate small apparatus and manipulatives to support pupils in their Mathematics lessons which children can freely access. In addition, classrooms have a Maths working wall to show the journey of their Mathematics learning and to display relevant vocabulary and models. Mathematical dictionaries are available in all classrooms. Additional resources for other units – shape, measures etc. are available from the central storage area. There is also a wide range of software available to support the teaching of Mathematics these range from the use of the Interactive White Boards, Interactive Teaching Programmes and online resources specifically purchased for the teaching of Mathematics, including Mathletics, Purple Mash and Power Maths.

SECTION NINE – MONITORING AND REVIEW

9.1 Monitoring of the standards of children's work and of the quality of teaching in Mathematics is the responsibility of the subject co-ordinator and SMT. The work of the Curriculum Team Leader and Mathematics subject co-ordinator 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. Mathematics is monitored as part of the school monitoring cycle, and involves tasks such as book scrutinies, lesson observations, data analysis and monitoring of planning. This information may then be fed into the School Improvement Plan as part of the review of the subject. The Headteacher allocates regular management time to the Curriculum Team Leader so that they can review samples of children's work and undertake lesson observations of Mathematics teaching across the school.

This policy is reviewed every two years.

SECTION TEN – CHILDREN IN CARE

10.1 As for all our pupils, Godinton Primary School is committed to helping every Child in Care (CIC) to achieve the highest standards they can. To this end staff will ensure that in delivering the curriculum they set suitable learning challenges of CIC, respond to the diverse learning needs of CIC, and help to overcome the potential barriers to learning and assessment for CIC. The Mathematics coordinator will support staff in doing this within this subject.

SECTION ELEVEN – EQUALITY STATEMENT (Refer also to specific policies for equal opportunities and racial equality)

11.1 At Godinton Primary School, we are committed to ensuring equality of opportunity for all members of our school community irrespective of race, religion or belief, gender, gender reassignment, disability, sexual orientation, age, pregnancy or maternity, marriage and civil partnership or socio-economic background. We are determined to develop a culture of inclusion and diversity in which all those connected to the school feel proud of their identity and ability to participate fully in school life.

We tackle discrimination through the positive promotion of equality by challenging stereotypes and by creating an environment that champions respect for all. At Godinton Primary School, we believe that diversity is a strength that should be respected and celebrated by all those who learn, teach and visit us.

All school policies have an explicit aim of promoting equality and will be reviewed in terms of their contribution and effectiveness in achieving this aim.