

★ Garden Suburb Infant School ★

Maths Policy

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Statement of intent

Garden Suburb Infant School recognises that maths is both a key skill within school, and a vital life skill to be utilised through everyday experiences. A high-quality maths education provides a firm foundation for understanding how maths is used in everyday life and activities, developing pupils' ability to think, reason and communicate mathematically. Through frequent meaningful and relevant learning opportunities, our pupils will develop their curiosity in and enjoyment of maths. They will also develop the crucial skills to reason and problem solve.

Aims

Through the teaching of maths, we aim to develop:

- a highly positive attitude towards maths and an awareness of the relevance of maths in the real world.
- competence and confidence in pupils' maths knowledge, concepts and skills
- an ability to solve problems and think logically in order to work systematically and accurately.
- an ability to work both independently and cooperatively with others.
- competence and confidence in pupils' maths knowledge, concepts and skills.
- an appreciation of the creative aspects of maths and an awareness of its aesthetic appeal.
- fluency in maths through frequent practise with clear progression from Reception through to the end of key stage One.
- fluency in recalling and apply number facts rapidly.
- confidence in tackling increasingly complex problems.
- reasoning mathematically through verbally explaining methods and demonstrating proof, using mathematical language.
- solve routine and non-routine problems/puzzles with increasing independence, perseverance and flexibility.
- understand the importance of mathematics in everyday life.
- develop a positive mind set towards mathematics.

1. Legal framework

This policy has due regard to statutory guidance including, but not limited to, the following:

- DfE (2021) 'National curriculum in England: Mathematics programmes of study'
- DfE (2021) 'Statutory framework for the early years foundation stage'
- DfE (2021) 'Teaching mathematics in primary schools'

This policy operates in conjunction with the following school policies:

- Equality Plan
- Teaching and Learning Policy
- Assessment Policy
- Marking and Feedback Policy

2. Roles and responsibilities

The subject leader is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of maths, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all maths-related resources.
- Liaising with teachers across all phases.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessing pupil performance.
- Advising on the contribution of maths to other curriculum areas, including cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of maths in subsequent years.

The classroom teacher is responsible for:

- Acting in accordance with this policy.
- Ensuring progression of pupils' mathematical skills, with due regard to the national curriculum.
- Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Liaising with the subject leader about key topics, resources and support for individual pupils.
- Monitoring the progress of pupils in their class and reporting this on an annual basis to parents.

- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the SLT.
- Undertaking any training that is necessary in order to effectively teach the subject.

The SENCO is responsible for:

- Liaising with the subject leader in order to implement and develop maths throughout the school.
- Organising and providing training for staff regarding the maths curriculum for pupils with SEND.
- Advising staff how best to support pupils' needs.
- Advising staff on the inclusion of mathematical objectives in pupils' individual education plans.
- Advising staff on the use of teaching assistants in order to meet pupils' needs.

3. Early years provision

Activities and experiences for pupils will be based on the seven areas of learning and development, as outlined in the DfE's 'Statutory framework for the early years foundation stage'.

Mathematics is taught in Reception using The White Rose scheme of learning. This underpins the educational programme for Maths (DfE March 2021). All children are encouraged to develop their understanding of number, shape, measure and spatial thinking through a wide variety of activities which allow them to enjoy, explore, practise and talk confidently about mathematics. We want the children to develop confident knowledge and understanding of numbers to 10. Assessment is ongoing throughout Reception and summative judgements are reported to the Headteacher.

Children will learn how to:

- Count confidently.
- Develop a deep understanding of the numbers to 10.
- Understand the relationship between numbers and the patterns within those numbers.
- Develop a secure base knowledge of vocabulary from which mastery of mathematics is built.
- Develop their spatial reasoning skills across all areas of mathematics including, shape, space and measures.
- Develop positive attitudes and interests in mathematics.
- Look for patterns and relationships.
- Spot connections.
- Talk to adults and peers about what they notice.

4. The national curriculum

Key Stage 1

The White Rose Maths small step, mastery based scheme of learning covers all the content of the National Curriculum and is used for long, medium and short term planning.

In Key Stage One all classes take part in the 'Mastering Number' programme which aims to enable children to work "with fluency in calculation and a confidence and flexibility with number", NCETM (National Centre for Excellence in Teaching Mathematics).

The information below demonstrates the 'ready-to-progress' criteria across all year groups and is not exhaustive of everything children will learn through the curriculum.

In Year 1, pupils will be taught to:

Number and place value

- Count within 100, forwards and backwards, beginning with any number.
- Reason about the location of numbers to 20 within the linear number system, including comparing using $<$ $>$ and $=$.

Number facts

- Develop fluency in addition and subtraction facts within 20.
- Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple and count forwards and backwards through the odd numbers.

Addition and subtraction

- Read, write and interpret equations containing addition, subtraction and equals symbols, and relate additive expressions and equations to real-life contexts.
- Compose numbers to 10 from two parts and partition numbers to 10 into parts, including recognising odd and even numbers.

Geometry

- Recognise and name common 2D and 3D shapes presented in different orientations and know that rectangles, triangles, cuboids and pyramids are not always similar to one another
- Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.

In Year 2, pupils will be taught to:

Number and place value

- Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.
- Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.

Number facts

- Secure fluency in addition and subtraction facts within 10 through continued practice.

Addition and subtraction

- Add and subtract across a 10.

- Recognise the subtraction structure of ‘difference’ and answer questions of the form “How many more?”
- Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only 1s or only 10s to or from a two-digit number.
- Add and subtract within 100 by applying related one-digit addition and subtraction facts.
- Add and subtract any two-digit numbers.

Multiplication and division

- Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.
- Relate grouping problems where the number of groups is unknown to multiplication equations within a missing factor, and to division equations.

Geometry

- Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.

Please see the Calculation Policy for more information on how addition, subtraction, multiplication and division are taught.

5. Cross-curricular links

Wherever possible, the maths curriculum will provide opportunities to establish links with other curriculum areas.

English

Mathematical terminology is used, where appropriate. Maths-based texts are sometimes used in English lessons and in guided reading sessions.

Science

Pupils’ data collection and analysis skills are further developed through the conduction of physical experiments, using units of measurement, calculating averages and interpreting results.

Pupils record their finding using charts, tables and graphs.

Humanities

Data analysis, pattern seeking and problem-solving skills are developed through the teaching of Geography.

Pupils’ understanding of time and measurements of time are developed through discussions of historical events and chronology.

6. Teaching and learning

Pupils will be taught to describe key characteristics and associated processes in common language, as well as understand and use technical terminology and specialist vocabulary.

Pupils will undertake independent work, and have the opportunity to work in groups and discuss work with fellow classmates.

Lessons will allow for a wide range of mathematical, enquiry-based research activities, including the following:

- Questioning, predicting and interpreting
- Pattern seeking
- Collaborative work
- Problem-solving activities
- Classifying and grouping

Lessons will involve the use of a variety of sources, including data, statistics, graphs and charts.

The classroom teacher, in collaboration with the subject leader, will ensure that the needs of all pupils are met by:

- Setting tasks which can have a variety of responses.
- Providing resources of differing complexity, according to the ability of the pupils.
- Setting tasks of varying difficulty, depending on the ability of the class.
- Utilising teaching assistants to ensure that pupils are effectively supported and challenged.

A maths mastery approach is taken to the curriculum, in which fluency comes from deep knowledge and practice. This means that structured questioning is used to ensure that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts.

Focus is put on the development of deep structural knowledge and the ability to make connections, with the aim of ensuring that what is learnt is sustained over time.

7. Planning

All relevant staff members are briefed on the school's planning procedures as part of their staff training.

Throughout the school, maths is taught as a discrete lesson and as part of cross-curricular themes when appropriate.

Teachers will use the key learning content in the DfE's statutory guidance 'National curriculum in England: mathematics programmes of study'.

Lesson plans will demonstrate a balance of interactive and independent elements used in teaching, ensuring that all pupils engage with their learning. There will be a clear focus on direct, instructional teaching and interactive oral work with the whole class and targeted groups.

Teachers will ensure that all maths lessons include a focus on mental calculation.

Long-term planning will be used to outline the units to be taught within each year group.

Medium-term planning will be used to outline the vocabulary and skills that will be taught in each unit of work, as well as highlight the opportunities for assessment. Medium-term plans will identify learning objectives, main learning activities and differentiation. Medium-term plans will be shared with the subject leader to ensure there is progression between years.

Short-term planning will be used flexibly to reflect the objectives of the lesson, the success criteria and the aims of the next lesson. Short-term planning is the responsibility of the teacher. This is achieved by building on their medium-term planning, taking into account pupils' needs and identifying the method in which topics could be taught.

All lessons will have clear learning objectives, which are shared and reviewed with pupils.

Maths homework is set regularly in KS1 and will build on that week's lesson objectives. Homework will take a variety of formats, including mental maths tasks, games, data analysis activities and written tasks. It is usually set on Tapestry and demonstrated to the children.

8. Assessment and reporting

Pupils will be assessed and their progression recorded in line with the school's Assessment Policy.

An EYFS Profile will be completed for each pupil in the final term of the year in which they reach age five.

The progress and development of pupils within the EYFS is assessed against the early learning goals outlined in the 'Statutory framework for the early years foundation stage'.

Throughout the year, teachers will plan on-going creative assessment opportunities in order to gauge whether pupils have achieved the key learning objectives.

Assessment will be undertaken in various forms, including the following:

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Marking work against the learning objectives
- Pupils' self-evaluation of their work
- Classroom quizzes

Formative assessment, which is carried out informally throughout the year, enables teachers to identify pupils' understanding of subjects and inform their immediate lesson planning.

In terms of summative assessments, the results of end-of-year assessments will be passed to relevant members of staff, such as the pupil's future teacher, in order to demonstrate where pupils are at a given point in time.

Standardised tests will be used at the end of Year Two, to measure each pupil's attainment in all areas of maths.

Parents will be provided with a written report about their child's progress during the Summer term every year. These will include information on the pupil's attitude towards maths, understanding of mathematical terminology, investigatory skills and the knowledge levels they have achieved.

Verbal reports will be provided at parent-teacher interviews during the Autumn and Spring terms.

The progress of pupils with SEND will be monitored by the SENCO.

9. Resources

The subject leader is responsible for the management and maintenance of maths resources, as well as for liaising with the SBM in order to purchase further resources.

Maths resources will be stored in each classroom.

Resources which are not required regularly, and those in relation to key whole-school topics, will be stored in the cupboards at the back of the hall.

Display walls will be utilised and updated regularly, in accordance with the area of maths being taught at the time.

Maths equipment and resources will be easily accessible to pupils during lessons.

The subject leader will undertake an audit of maths equipment and resources on an annual basis.

10. Equal opportunities

In accordance with the school's Equality Plan, all pupils will have equal access to the maths curriculum.

Gender, learning ability, physical ability, ethnicity, linguistic ability and/or cultural circumstances will not impede pupils from accessing all maths lessons.

Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

All efforts will be made to ensure that cultural and gender differences will be positively reflected in all lessons and teaching materials used.

The school aims to provide challenge for all pupils by teaching maths through the Mastery approach. We aim to provide pupils with the opportunity to extend their mathematic thinking through problem solving, investigative work and research of a mathematic nature.

11. Monitoring and review

This policy will be reviewed on an annual basis by the subject leader.

The subject leader will monitor teaching and learning in the subject at Garden Suburb Infant School, ensuring that the content of the national curriculum is covered across all phases of pupils' education.

The Curriculum Committee of the governing body is briefed to oversee the teaching of numeracy, and a named governor may be appointed to meet regularly with the subject leader to review progress, depending on school priorities.

Any changes made to this policy will be communicated to all teaching staff.