

# Heritage Park Primary School

## Maths Policy



**Approved by:** Miss Karen Bell (Headteacher)

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**Next review due by:** February 2024

## **Heritage Park Primary School**

### **Maths Policy**

#### **Introduction**

At Heritage Park Primary School, we recognise the importance of maths and how it helps to build our world. We encourage children to see that maths is in every part of life, from reading a recipe, buying things at a shop, using directions, to telling the time. We also show the children how maths has links to many areas of the curriculum including science, D.T, art and music. By studying maths, children will be equipped with the skills and understanding needed for their future life including; reasoning, problem solving and reaching logical conclusions.

#### **Our approach to teaching maths**

Our aim is to provide a course of study following the 2014 National Curriculum. The teaching of maths is the responsibility of the class teacher who is supported by the subject leader. Lessons are differentiated to cater for the needs of all children.

#### **Aims**

At Heritage Park Primary School, we aim to:

- Deliver an ambitious, connected curriculum, accessible to all pupils, in order to support pupils to become mathematical thinkers, with the ability to solve problems, to reason, to think logically, to persevere and to work systematically and accurately.
- We want the children to gain enjoyment in maths through a growing self-confidence in their ability and sense of achievement.
- Provide opportunities for children to challenge themselves, to develop communication skills, independence and co-operation when solving problems, and encourage them to take responsibility for their learning.
- Teach key mathematical skills and knowledge through both the daily lesson and across the wider curriculum so children understand the value and purpose of mathematics in every-day life.
- Ensure maths vocabulary is used in the correct way to develop children's knowledge.
- Encourage children to use the correct mathematical language and terminology to discuss their mathematics and to explain their reasoning.
- Deliver an inspirational and enjoyable mathematics curriculum through quality first teaching which allows children to reach their full potential
- Ensure the majority of children attain, at least, the age-related expectations in mathematics.

## **Legal framework**

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

- DfE (September 2013) 'National curriculum in England: Mathematics programmes of study'
- DfE (September 2021) 'Statutory framework for the early years foundation stage'

## **Our Provision**

Heritage Park Primary School's policy has been developed on the basis of the National Curriculum for England and also in line with White Rose's long term plan.

Mathematical concepts are introduced using a 'concrete, pictorial and abstract' approach; enabling all children to experience hands-on learning when discovering new mathematical topics and allowing them to have clear models and images to aid their understanding. We teach children to breaking down problems into a series of simpler steps and persevere in seeking solutions. (See planning and teaching for more detail.)

## **Early Years Provision**

In the Early Years Foundation Stage, we follow the 'Statutory Framework for the Early Years (September 2021)'. We recognise the need to ensure children have an excellent grounding in understanding number, in order to help them excel mathematically as they progress through school. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

Daily maths lessons take place and there are carefully planned activities set out in the enhanced and continuous provision throughout the week in both the indoor and outdoor learning environments. These opportunities, often provided through the use of manipulatives, allows children to build and apply their understanding of number and counting to a variety of contexts and allows them to develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.

In addition, we ensure that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. We recognise the importance of children developing positive attitudes and interests in mathematics, looking for patterns and relationships, spotting connections, exploring mathematics through play via planned opportunities and continuous and enhanced provision, talking to adults and peers about what they notice and not being afraid to make mistakes.

## **Key Stage 1 and 2**

Our emphasis is to:

- Achieve fluency in mathematical concepts

- Explain concepts using mathematical reasoning and language
- Apply knowledge to solve a variety of problems

By using a 'Concrete, Pictorial and Abstract' approach to introduce new learning, children to experience the physical aspects of maths before finding a way to present their findings and understandings in a visual form and then moving on to abstract numbers. Sustained levels of challenge are incorporated through varied and high-quality activities with a focus on procedural and conceptual fluency, reasoning and problem solving. Pupils will 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.

Emphasis is given to mathematical language and questioning so pupils can discuss and explore the mathematics they are doing. This in turn supports them to take ideas further and to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. Children are valued for the contributions they make and are encouraged to value the contributions of others.

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

### **Planning and teaching**

Maths is taught daily in all year groups. Teachers will follow the long-term plan to plan and deliver lessons that suit the particular learning styles of the children in the year group. 'Cold task' assessments are completed before the start of each unit which look at the knowledge that has been retained from the previous year's unit. Teachers use the outcomes of cold tasks and the statutory framework to produce a short-term plan for the unit, progressing in small steps and think about building the skills and focusing on the language that their class needs. They ensure they regularly address misconceptions by using the misconceptions bank to inform planning and refer to the calculation policy to ensure modelling is consistent.

Teachers set high expectations and use their knowledge of the pupils, subject expertise, White Rose materials, Nrich and NCTEM resources, textbooks and various other sources to provide a range of opportunities to secure understanding. Lessons will allow for a wide range of mathematical, enquiry-based research activities. Children are encouraged to use a range of strategies including: working independently, co-operatively and collaboratively; questioning, predicting and interpreting; pattern seeking and problem solving.

Opportunities to revisit previously taught skills and to develop children's ability to recall and apply previously taught facts quickly and accurately are planned into the start of most lessons.

New concepts are introduced through manipulatives and equipment and resources are easily accessible to pupils during all maths lessons.

The classroom teacher, under the guidance of the subject leader, will ensure that the needs of all pupils are met by:

- Providing resources and tasks of differing complexity, according to the attainment of the pupils, providing differing levels of challenge.
- Encouraging partner talk to stimulate and develop a curiosity for maths and reinforce mathematical vocabulary.
- Challenging the children to stretch themselves and take risks in their learning.
- Utilising teaching assistants to ensure that pupils are effectively supported.

When marking work, teachers adhere to the school's Feedback and Marking Policy.

### **Times tables and Number Sense**

Year group	Weekly expectation	Expectation by the end of the year
Reception	3 sessions of number sense taught for 15 minutes per week.	To be able to subitising, manipulate, and partition numbers to 10, and to see the numbers different properties.
Year 1	3 sessions of number sense taught for 15 minutes per week.  Number knowledge	To be able to subitising, manipulate, and partition numbers to 20, and to see the numbers different properties. Strategies for addition and subtraction to 10.  Count in multiples of 2,5 and 10. Recall and use doubles of numbers to 10 and corresponding halves.
Year 2	3 sessions of 15 minutes per week. Number sense until Autumn.  Timetables taught in summer.	Learning to extend and apply key facts and strategies to addition and subtraction calculations involving 2-digit numbers.  Recall and use multiplication and division facts for the 2,5, and 10 tables, including off and even numbers.
Year 3	3 sessions of 15 minutes per week	Recall and use the multiplication and division facts for the 3, 4 and 8 times tables.
Year 4	3 sessions of 15 minutes per week	Recall and use multiplication and division facts for multiplication tables up to 12 x 12.  Although 3 times a week is the expectation, times tables are often taught more regularly in year 4 to support the MTC.
Year 5	3 sessions of 15 minutes per week	Apply times table knowledge to fractions, decimals and multiplication larger numbers

Year 6	3 sessions of 15 minutes per week	Apply times table knowledge to fractions, decimals and multiplication larger numbers.
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### **Assessment**

For all summative assessments, teachers will update their assessment records on a regular basis, using the Insight software. This will be monitored by the Senior Leadership Team (including the subject leader).

A baseline assessment of maths skills is completed upon entry into the Reception class. The 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'.

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

- Formative assessment takes place in most lessons including talking to pupils and asking questions and whiteboard work.
- Discussing pupils' work with them.
- Pupils' self-evaluation of their work.
- Summative assessment takes place at the start and end of each unit.
- PUMA or SATS tests are taken termly to check knowledge has been secured and can be applied.
- Key stage one and two classes have a fortnightly arithmetic session in addition to the maths lessons. (Year 1 do not begin until Spring 1.)
- 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'.
- Year 2 complete SATs tests.
- Year 4, pupils complete the Multiplication Tables Check (MTC)
- Year 6, complete SATs tests.

Results of summer term assessments and information regarding a child's attainment in maths will be discussed within a 'handover' meeting, with the pupil's next teacher.

### **Intervention**

- When the majority of the class have not understood a lesson, the topic is revisited the next day.
- When a few individuals have not secured the learning, a sticker is placed in their book and the TA or teacher will revisit the learning before the next session to ensure the pupils do not fall behind.
- Children in reception are taken for a 1-2-1 (or in a small group) to revisit any area of learning they have not yet secured. A list is kept of interventions because they do not work in books.
- After termly PUMA tests, children are identified for Shine interventions.

- Any children that are struggling to progress are discussed with SLT (in pupil progress meetings), the subject leader or the SENDCo to ensure appropriate interventions are put in place promptly.
- Times tables interventions and Number sense interventions are also put in place for some children.

Following termly assessments, all teachers will provide the Headteacher and SLT with a copy of the results and an outline of areas for development based upon their test analysis. The assessments and analysis will be discussed within termly pupil progress meetings, attended by the class teacher and the SLT and any necessary actions put in place.

### **Special Educational Needs and/or Disabilities.**

The expectation is that most pupils will move through the programme of study at broadly the same pace. Teachers set high expectations for every pupil, whatever their prior attainment. Lessons are planned to address potential areas of difficulties for all children and to remove barriers to pupil achievement. Lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

Some children will require additional scaffolding and support within a small step or may be working at a different stage of the curriculum to their peers.

Where a child has been identified as having a Special Educational Need or Disability (SEND) they will receive additional support within the classroom from the class teacher and the class teaching assistant and/or 1:1 teaching assistant. The SENDCo, along with the class teacher, will monitor the progress of these children through their PSP and or Educational Health Care Plan (EHCP) targets and staff discussions. Staff may follow recommendations from external agencies, when planning their lessons and preparing resources, in order to provide quality first teaching to all pupils.

Children who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content.

### **Parental involvement**

At school we encourage parents to be involved by:

- Inviting them into school three times a year to discuss the progress of their children.
- Providing parents with a yearly report outlining their child's achievements.
- Sending home a booklet at parent's evening with ideas on how to support activities at home.
- Sending weekly homework activities home to be completed with the child.
- Access to Ed Shed, and for some classes Emile, to support maths and times tables.

- Regular communication via Tapestry or Really School.
- Attending parent workshops.

### **Monitoring and review**

Maths is monitored regularly by the subject leader. The Senior Leadership Team (SLT) are responsible for ensuring the findings of monitoring lead to positive change and improvement. The SLT organise staff training according to the targets set out in the School Development Plan (SDP). Staff individual needs are assessed through performance management meetings, staff meetings, book scrutiny and lesson observations.

### **Supporting Documents**

- Feedback and marking Policy
- Maths Long Term Plan
- Calculation Policy
- SEND policy
- Equality and Diversity Policy

### **Conclusion**

By following this policy, we at Heritage Park Primary School seek to develop as fully as possible the knowledge and understanding of mathematics in all the children in our care.