KINGS HILL SCHOOL
PRIMARY & NURSERY

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Maths Policy

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Introduction

At Kings Hill School Primary & Nursery, we are committed to providing a high-quality mathematics education; therefore, providing 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.

Aims

Using the national curriculum for mathematics, we aim to ensure that all pupils:

- Develop an enjoyment and interest in mathematics and an appreciation of its contribution to aspects of everyday life.
- 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.
- Can make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

Intent

At Kings Hill School Primary & Nursery, we want all our pupils to be confident and competent mathematicians. Through a mastery approach, we aim to:

- ensure children have a fluent knowledge of arithmetic;
- be able to work with numbers;
- apply their skills to problem solving;
- have the ability to reason;
- use known mathematical facts;
- use appropriate mathematical vocabulary to concisely explain their reasoning of a mathematical problem through rich and varied mathematical content;
- ensure that pupils do not see maths as an isolated subject but part of their everyday lives;

At the core of what we believe, is ensuring children are confident and positive about mathematics through fostering success. Building connected mathematical knowledge and retention are fundamental to our ethos at Kings Hill. In all, we aim to develop mathematicians that are resilient and courageous in their mathematical endeavours.

We have developed six learner profiles that fundamentally underpin our curriculum aims and design. These profiles encompass our values based ethos, reflect the strengths of the school and are responsive to the needs of our community and the ever changing wider world around us:

- *I am a good communicator.*
- *I am knowledgeable.*
- *I am an innovator.*
- *I am an individual.*
- *I am a good citizen.*
- *I am emotionally intelligent.*

Values Based Education

The school has six core values developed by staff, pupils, parents and Governors. These six values represent the basis of values-based education at Kings Hill School and all other values are linked to them throughout the year such as compassion, loyalty, happiness, humility and trust. Our school values draw attention to key behaviours needed for children to become excellent learners and citizens. These are specifically taught through our curriculum and assembly programme.

Implementation

At Kings Hill School Primary & Nursery, we use the White Rose schemes of learning to support our planning of lessons. The mastery approach embedded into our lessons, fosters the concrete, pictorial, abstract approach developed by Bruner. Lessons are structured around this approach with a high emphasis on concrete manipulatives to promote understanding.
Part of our daily maths lessons are as follows:

- Retrieval practice – this incorporates interleaving to ensure spaced practice of fluency and problem solving.
- Focused diagnostic questioning to inform the teacher of misconceptions in order to adapt and respond accordingly (responsive teaching).
- Carefully planned, precise worked examples to develop conceptual and procedural knowledge; this incorporates principles of variation to ensure children see mathematics framed in different ways.
- Manipulatives (accessed readily) and scaffolds to support learners' understanding, used appropriately by the teacher and withdrawn when appropriate.
- When appropriate knowledge has been secured, exposure to rich mathematical investigations and inquiry opportunities in order to broaden understanding of relationships.
- Teachers skilfully question, follow-up and respond to learners, in order to gather levels of understanding to adapt teaching.
- Following the lesson, if children are unsure or show a lack of understanding that needs further input, they attend same-day intervention.

Maths in Foundation Stages 1 and 2:
Our school's maths progression model (Foundation Stages 1 and 2) is used alongside White Rose in Foundation Stage 2 to inform teachers' planning so that children have the appropriate mathematical knowledge required to access the Year 1 curriculum.
We relate the mathematical aspects of the children's work to the Development Matters statements and the Early Learning Goals (ELG).

ELG: Number
We provide children with opportunities to; develop their understanding of numbers to 10; including the composition of each number, subitise and automatically recall number bonds up to 5 and some number bonds to 10 including double facts.

ELG: Numerical Patterns
We provide children with opportunities to; verbally count beyond 20, recognising the pattern of the counting system, compare quantities up to 10 in different contexts and explore and represent patterns within numbers up to 10.

- We provide all children with opportunities to engage in maths activities both inside and outside of the classroom. Easily accessible, quality mathematical resources are provided so that children can self-select and engage freely as well as engaging in planned activities. Whenever possible, children's interests are used to support delivering the mathematics curriculum.
- We continually observe and assess children against these areas using their age-related objectives, and plan the next steps in their mathematical development.

Enrichment in Mathematics

Enrichment activities are incorporated in to our curriculum such as:
- Outdoor learning experiences and using mathematics in our natural world.
- Termly cookery where the children use mathematics to create an end product e.g. measure, weigh, read scales.
- Taking part in organised maths days such as Aim High
- Visits to local secondary schools to engage in mathematical problem solving.
- Local maths competitions.
- Use mathematics in wider responsibilities in the school e.g. House captains, school council.

Impact

Our maths curriculum is of a high quality and ensures there is clear progression. In order to ensure we measure impact, we gather a variety of data and feedback to check whether learning has occurred. The information gathered through these methods directly impacts the future planning of teaching and learning opportunities, ensuring that we are responsive to the needs of our learners.

- Formative assessments; through daily retrieval practice, we can check for children's retention of previously taught concepts.
- Foundation Stage; summative assessment provided against the Early Learning Goals.
- Regular short summative assessments used in Years 1 - 6; these are based on previous work, not the current unit, this promotes the principles of interleaving. These short assessments feed into planning and focus for retrieval practice.
- End of term summative assessments in Years 1 - 6; these occur during three assessment windows yearly.
    - Autumn & Spring assessments are taken from the White Rose and directly test what has been covered that term.
    - Summer assessment is taken from NFER and it tests what has been covered throughout the academic year. NFER is standardised to ensure validity when considered with teacher judgements, books and an aggregation of the shorter weekly tests.

Learning Environment

Our curriculum is supported by a rich learning environment. Working walls support children's learning in every classroom for maths.

- Maths working walls are in constant use throughout individual lessons and across weeks focusing on a particular domain.
- Key vocabulary is displayed.
- Reasoning question stems are on show and used to model reasoning.
- Worked examples are modelled and displayed for reference (sometimes including pictorial and concrete representations).
- Visuals to support our calculation policy are displayed for reference.
- Mathematical manipulatives and resources are easily accessible for all children to support their learning.
- Whole school times tables success is displayed and celebrated weekly.

Equal Opportunities and Inclusion of all Learners

All children have equal access to the mathematics curriculum. The SLT, Class Teachers and TAs at Kings Hill School Primary & Nursery are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, scaffolds will be used to support the children's learning and, if appropriate, extra support given. Pupils that are more able will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

Roles and Responsibilities

It is the role of the Subject Leader to ensure that, along with SLT, the subject is monitored using a range of processes to inform the development of mathematics teaching and learning. Outcomes are shared with colleagues and appropriate actions are implemented. It is the role of the Subject Leader to identify and support the training needs of colleagues.

The Subject Leader engages with professional development and learning and imparts their interest in mathematics to the school community. It is the role of the Subject Leader to ensure that pupil voice is valued and responded to and there is an understanding of the importance and value of mathematics amongst the staff and children.

It is the school's role to provide effective support for the Subject Leader's development of mathematics.

It is the responsibility of all staff to inform the Subject Leader of resources that need replenishing or are required to enhance the teaching and learning of mathematics.

Review

This policy is monitored through:

- Regular scrutiny of children's work
- Regular monitoring and evaluation of planning
- Evaluation and analysis of assessment data
- Lesson observations to monitor the quality of teaching and implementation of planning
- Pupil interviews and questionnaires
- Teacher feedback