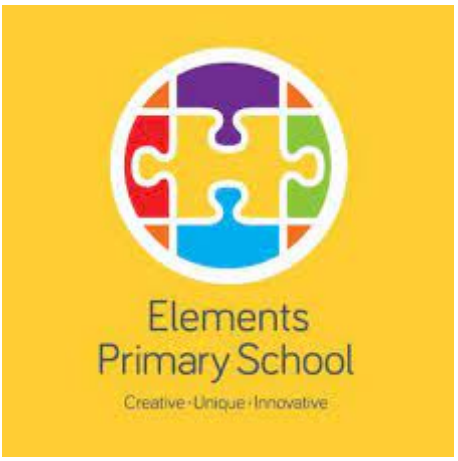

Maths Policy

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This document is intended to inform Teachers, Governors and parents about the teaching and learning of Maths across all key stages at Elements Primary School.

Rationale

At Elements Primary School, we have a passion for high standards in mathematics and believe that all pupils can become excellent mathematicians. We use a teaching for mastery approach, which stems from the White Rose Maths resources. Maths teaching for mastery supports the idea that everyone can do maths and all pupils are encouraged by the belief that by working hard at maths they can succeed.

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.*

In order to provide our children with the opportunities to meet these aims, we use a rigorous teaching cycle in which children have the opportunity to observe, practise, reason and apply key mathematical concepts.

We use the White Rose Maths key resource. This ensures that our children are taught the key concepts and skills in sequential steps. We believe that this systematic approach to mathematical learning embeds knowledge and understanding and creates meaningful changes to the long-term memory of our children.

We ensure children across the school have the opportunity to learn using concrete, pictorial and abstract representations, believing that moving between these approaches enables children to connect abstract symbols with familiar concepts, supporting pupil's mathematics sense.

Principles of the Maths Mastery Approach

To establish:

- **Coherence**
  Lessons are broken down into small, connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.
- **Representation and Structure**
  Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.
- **Mathematical Thinking**
  If taught ideas are to be understood deeply, they must not be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.
- **Fluency**
  Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.
- **Variation**
  This is twofold. It is firstly about how the teacher represents the concept of being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes.

Implementation

Every child in school takes part in Early Bird Maths. This is 15-20 minutes of arithmetic practice as soon as they come into school in the morning (between 8:45-9:05). We believe this gives children an excellent opportunity to practise their recall skills while getting them into a positive learning mindset for the day.

KS1 children then have a maths session between 9:05-9:40 in which the teacher delivers the input for the lesson and the children have a go at the first few practice questions. Then during assembly (9:40-10:00) teachers can review the children's learning and separate them into groups - one to practise Reasoning, one to practise Problem-Solving and the third to receive Same Day Intervention (SDI) from the teacher, focusing on Fluency. After assembly the children form their new groups and continue with their maths learning until 10:30.

KS2 children follow the same timings as KS1 but with an additional 15 minutes lesson time. Their second session therefore ends at 10:45.

Maths in the Early Years
Teachers in the EYFS ensure that the children learn through a mixture of adult-led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach. This is supported by the Development Matters non-statutory guidance as well as White Rose Maths Medium term plans for EYFS Maths and the NCTEM Mastering Number Resources.

The EYFS Framework in relation to mathematics aims for our pupils to achieve the following Early Learning Goals:

Number
- develop a deep understanding of number to 10, including the composition of each number.
- subitise up to 5
- automatically recall number bonds up to 5 and some number bonds up to 10, including double facts

Numerical Patterns
- 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.

Marking and Feedback
Teachers employ 'live-marking' in which they assess the child's work in the moment and use coloured highlighters to demonstrate success and areas for improvement. Pink highlighter - correct; Green highlighter - Area for improvement; Orange highlighter - an obvious mistake (e.g. a number formed backwards).

Verbal feedback is provided to children continuously throughout the lesson. Staff may annotate pupils' work to provide further scaffolds and modelling.

Assessment
Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of pupils daily through:
- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning is evaluated in light of these assessments.

Summative assessments are carried out at the beginning and end of each block, using White Rose Maths pre- and post-assessments. These assessments, alongside judgements made from classwork support the teacher to assess whether a child is meeting age-related expectations.

NFERs - children engage with NFER tests at the end of each term in order for teachers to formally assess their learning and gain an understanding of the children's attainment in line with age-related standards.

In EYFS, children are measured at the end of the Foundation stage against the Early Learning goals criteria for the mathematics specific area or development and are graded as 'emerging' or 'expected' for the Number and Numerical patterns Early Learning Goals.

Special Educational Needs
Pupils identified on the SEND register are assessed against the National Curriculum age-related expectations in their current year group or from an earlier year group if necessary. Some children are assessed using the SENIT Developmental Journal. This informs the level of support these children require in class or through interventions.