KS2 Mathematics: Intent, Implementation and Impact

Intent

Our ambition is to ensure our maths curriculum is accessible to all and caters for every child's ability, whilst ensuring we provide every opportunity for children to reach their full potential. We believe Mathematics is a tool for everyday life. Mathematics teaches us how to make sense of the world around us. Our maths curriculum enables us to develop children's ability to calculate, communicate, reason and solve problems.

We endeavour to ensure all children become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. We deliver lessons that are creative and engaging. We want children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems using a Concrete, Pictorial, into Abstract approach.

We intend for our pupils to be able to apply their mathematical knowledge to Science and across a range of other subjects. We want children to recognise that Mathematics has developed over centuries and has been the fundamental basis for huge advances in Science, Engineering, Technology and Sport.

We believe in making mathematical learning come alive within a real-life context and endeavour to make sure that the children realise the subject is essential to everyday life and financial literacy. Irrespective of year group, we want our children to have the ability to reason mathematically and have an appreciation of the beauty and power of mathematics, whilst embracing a sense of enjoyment and curiosity about the subject. We strive for all to be actively engaged in their own learning, to be motivated and eager and to achieve and attain to their full potential in Mathematics.

Implementation

Planning

Planning is based on National Curriculum objectives with priority given to those objectives covered in the NCETM Ready to Progress materials and documents. Teachers select materials may from a variety of sources (such as White Rose, Maths No Problem, 10Ticks) to support their planning without following a particular scheme.

A mastery approach to learning is fundamental to planning. Lessons are designed so that conceptual understanding underpins learning, and that opportunities are provided to embed learning before moving on to the next step. Lessons are planned and sequenced so that new knowledge and skills build on what has been taught before. As mathematics is a logically structured subject, based on a set of axioms, gaps in understanding directly impact on subsequent learning.

The aim of all lessons is to develop children's knowledge, understanding and skills, applying these to a variety of contexts.

Maths lessons do not need to fit a specific format. However, when planning a sequence of lessons, teachers will:

- Use precise questioning to test conceptual and procedural knowledge.
- Know how and when manipulatives should be used to scaffold difficult tasks or enhance understanding.
- Introduce new concepts in small steps.
- Provide opportunities to use skills in a range of contexts.
- Include tasks and challenge questions which challenge pupils to apply and deepen their learning and mathematical reasoning.
- Provide opportunities for individual, group and whole-class activities and discussions.
- Ensure the use of high-quality maths language. (Pupils should read, spell and pronounce mathematical vocabulary correctly).
- Provide opportunities to work with a computer as a mathematical tool.
- Revisit concepts and number facts to ensure learning is committed to long term memory.

Revisiting prior learning can be done as part of a daily maths lesson but can also take place separately as a quick activity, or quiz.

Daily opportunities are needed for pupils to practise and improve their mental maths skills as well as their written calculations. These should be structured so that children are encouraged to strive to improve their time and score each week.

Calculation Policy

Staff refer to the Calculation Policy when teaching formal methods, while recognising that sometimes pupils find or adapt their own efficient methods along the way.

All children also have access to their own personal account of ‘Times Tables Rockstar’ where they can practise individually and compete against other pupils and classes in school to develop fluency.

Impact

Pupils' skill, knowledge and understanding is assessed against the National Curriculum attainment targets. The impact of the curriculum on learners will be monitored primarily by the class teacher who is responsible for all teacher assessment. Teacher assessment is recorded each term. The Maths Lead, KS2 Lead, Deputy and Headteacher monitor progress on a regular basis in the form of observations, data analysis, pupil progress meetings and work sampling.

Formative Assessment will be a key part of every lesson. The teacher will share the objectives for the lesson with the children and make sure they are clear what is being expected of them to successfully achieve the objective. The short-term assessment will also involve the teacher checking the children's understanding at the end of the session to inform future planning and lessons.

Summative assessment is undertaken using standardised tests at intervals determined by the Headteacher.

Ultimately, the impact of Little Bowden's KS2 Maths curriculum will be measured in the children's attitudes to Mathematics alongside outcomes for learners across the Key Stage and in the nationally released data from Year 4 MTC and KS2 SATS.