Respectful, resilient, responsible learners.

Mathematics Policy

Policy updated: November 2022

Intent

At Abingdon our aim is for children to leave as confident, skilled and resilient mathematicians who understand that mathematics is a fundamental part of everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. The intent of our Abingdon mathematics curriculum is to design a curriculum, which is accessible to all and will maximise the development of every child's ability and academic achievement. We want our children to have a positive attitude towards mathematics and to recognise the subject both as a building block to success in life and as a source of fascination and enjoyment. We value a maths curriculum that is creative and engaging and provides opportunities for our children to develop the factual knowledge and skills to support them to become 'deep thinkers'. We want our children to know the purpose behind their learning and to be able to apply their knowledge to their everyday lives.

At Abingdon we subscribe to the aims of the National Curriculum for mathematics 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.

It is our aim to:

Develop a positive attitude towards mathematics where children build confidence, resilience and determination and are not afraid to make mistakes and learn from them.

Develop confidence and competence with numbers and the number system so all children become fluent in the fundamentals of maths through varied and frequent practice. Enable children develop their conceptual understanding and the ability to recall facts and apply that knowledge rapidly and accurately.

Develop the children's ability to solve problems through decision-making, flexible thinking in different ways and reasoning mathematically by communicating and presenting their findings effectively using appropriate mathematical vocabulary and language to justify or prove an argument in a range of contexts both independently and with others.

Have an awareness of how fascinating elements of mathematics can be and communicate using appropriate mathematical language.

Abingdon Calculations Policy

Our calculation policy has been developed and agreed after using the National Curriculum objectives and methods from the white rose scheme of work. At Abingdon Primary School, we recognise that mathematics can only be used effectively when the child understands the methods and reasoning behind the problem. With our calculation policy, we can be confident throughout school, that the hard work we all put into teaching the children each year to calculate, will be consolidated and extended the following year. By agreeing on the use of strategies and mathematical language the children will be taught in a consistent way in all classes, developing their understanding as they progress through school. This will hopefully cause less confusion for the children and ensure they have the necessary strategies and scaffolding to enable them to solve mathematical problems.

Implementation

At Abingdon Primary School we adopt a mastery approach to mathematics teaching and learning follows the White Rose scheme of work, which is creative and engaging.

This means that our teaching:

- has number at its heart
- stays in the required key stage and supports the ideal of depth before breadth.
- ensures that students can stay together as they work through the schemes
- provides time to build reasoning and problem solving elements into the curriculum

We follow the Medium-Term Plans designed by the White Rose Hub from Year 1 to Year 6 which ensures coverage, continuity and progression in our teaching. We use a variety of resources to supplement our teaching and support our planning. These include WR Premium resources, the Primary Mastery Professional Development materials (published by the NCETM) and DfE Primary NC Mathematics Guidance.

All teachers plan daily mathematics lessons which aim to break children's learning down into small, connected steps. Planning is done on a weekly basis and includes learning objectives, key vocabulary, varied activities and, where possible, identifies misconceptions that many children will

have. Factual knowledge (e.g. number bonds and times tables), procedural knowledge (e.g. formal written methods) and conceptual knowledge (e.g. of place value) are taught in a fully integrated way and are all seen as important elements in the learning of mathematics. All lessons include activities designed to provide opportunities for children to develop their reasoning skills and to solve a range of problem types.

In EYFS/KS1 we are implementing the 'Mastering Number' programme run by the NCETM. This programme is aims to secure firm foundations in the development of good number sense and supports children to leave KS1 with fluency in calculation and confidence and flexibility with number.

We believe that children's conceptual understanding and fluency is strengthened if they experience concrete, pictorial and abstract representations of a concept during a lesson and our lesson planning incorporates these approaches. Repetition of key ideas, sometimes in the form of whole class recitation may be used. This helps to verbalise and embed mathematical ideas and provides pupils with a shared language to think about and communicate mathematics. Children will experience a range of experiences in mathematics lessons e.g. practical activities and mathematical games, group and individual problem solving activities, whole class discussions in addition to working in a more formal manner in their mathematics books.

The whole class is taught mathematics together, with no differentiation by acceleration to new content. The learning needs of individual pupils are addressed through careful scaffolding, skilful questioning and appropriate rapid intervention, to provide the necessary support and challenge. Differentiation may also be achieved through the use of activities which cater for a range of mathematical response, the use of mathematical manipulatives and the use of teacher support. Children who grasp concepts rapidly are given opportunity to deepen their learning through the provision of carefully designed activities. Children who have not made the expected progress in a lesson will be supported by intervention groups. Grouping of children within lessons is fluid and flexible and will be based on children's performance in a previous lesson or the beginning of that particular lesson.

We use the SEND code of Practice and local and national guidance to inform our curriculum structure and our curriculum enables personalisation and equitable delivery of learning for all children regardless of need.
Children with an identified SEND may need carefully differentiated work to meet the objectives from lower year groups in order to make adequate progress. SEND children will have targets identified on their pupil support plans which will inform their interventions.

Working walls

All classrooms have a working wall where models, vocabulary and visual images used in previous lessons are displayed and referred to. Children will use these to support their learning.

Impact

Our high-quality mathematics curriculum aims to progress the development of children's confidence, skills and knowledge throughout their Primary school career.

Formative and summative assessment is an integral part of our mathematics teaching and it is through this that we measure the impact of our teaching.

Summative assessment will be undertaken using a variety of methods appropriate to the year groups. In some classes, teachers will assess children's learning at the start and end of a topic through the use of short, carefully designed tests. Additionally, all classes will undertake the White Rose Hub termly assessment tests (arithmetic and reasoning papers) at the end of Autumn, Spring and Summer terms. Statutory KS1 and KS2 SATS tests will be undertaken at the end of years 2 and 6.

Formative assessment will occur during lessons through observation, the use of questioning and from evidence in children's books. This assessment will be used as a basis to plan for children's progression in subsequent lessons or intervention groups.

Marking is undertaken by both pupils and teachers and is seen as an integral part of the assessment process to aid pupil progress. Marking will be relevant and focussed and will allow children time to review their own work and make necessary corrections.

Teachers assessments of children's progress against the learning objectives from the National Curriculum for mathematics are recorded termly for objectives covered on the SIMS tracking system. Children are assessed against the objectives using the descriptors Emerging, Developing or Secure depending on their judged depth of understanding and ability to apply their knowledge.

We monitor the quality and effectiveness of the teaching of mathematics at Abingdon Primary school through:

- scrutiny of assessment data
- monitoring of children's books
- learning walks
- pupil voice activities
- lesson observations.

Role of the Subject Leader

The Subject Leader will report on mathematics to the Headteacher and will liaise with the named link governors.

- to take the lead in policy development
- to support teaching colleagues (including support staff) through the provision of staff meetings, training session, 1:1 support for planning, team teaching and the provision of teaching resources.
- To monitor the quality of teaching and learning in mathematics across the school through the scrutiny of children's work, assessment data and observations
- To maintain a good knowledge of current thinking in mathematics through research, attending subject leader CPD and as part of a Teacher Research Group

Mr E Amesbury
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