Abbey Village Primary School

Mathematics Policy

"*Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment." (National Curriculum, 2014)*

A high-quality Mathematics education provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject. Mathematics is a proficiency which involves confidence and competence with numbers and measures. It requires an understanding of the number system, a repertoire of computational skills and an ability to solve number problems in a variety of ways in which information is gathered by counting and measuring and is presented in graphs, diagrams, charts, and tables. Mathematics gives children a way of coming to terms with their environment. Practical tasks and real-life problems can be approached from a mathematical point of view. Mathematics provides children with imaginative areas of exploration and study and gives them the materials upon which to exercise their mathematical skills. These skills are a necessary tool of everyday life. Mathematics should help children to develop an appreciation of, and enjoyment in, the subject itself, as well as a realisation of its role in other curriculum areas.

At Abbey Village Primary School, we believe in a Mastery Mathematics approach. 'Mastery' is defined as acquiring a deep, secure understanding of mathematical concepts that when adapted enable pupils to progress towards advanced progress. Teaching for mastery focuses on deep conceptual learning and developing secure foundations that pupils can build on throughout their education. Our Maths is underpinned by the premise that all children can achieve.

We believe it is our responsibility, as teachers and leaders, to provide an environment and experiences that enable children to:

• become fluent in the fundamentals of mathematics.

• develop a deep understanding of the fundamentals of mathematics.

• develop the ability to reason and solve problems.

Mathematics Curriculum Planning

The Early Years Foundation Stage

Abbey Village School adopts the Lancashire Planning documents to the meet the requirements and recommendations set out in the Statutory Framework. This planning is based on the Number Land idea. The focus is building strong foundations in number and the approach helps children to understand:

- What numbers are
- How numbers relate to each other
- How numbers can be made in different ways
- What addition and subtraction mean
- The language of part and whole

Many other aspects are covered including 2-D shape, as well as communication and collaborative working. We give all the children ample opportunity to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise, and talk confidently about mathematics.

Key Stage 1 and 2 Mathematics

Key Stage 1 and 2 Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study for: key stages 1 and 2 National Curriculum in England (2014) To implement the statutory requirements for mathematics for all year groups. In order to do this effectively we implement and follow the LPDS Red Rose Mastery Maths scheme from years 1-4, whilst using the structure and outline of the Lancashire Planning for both Year 5 and 6. Both schemes are sequential and provide consistency in Mathematics across both of our Key stages.

Lessons will commonly be taught using a 'ping pong' style approach, so called because the teacher orchestrates a continual back-and-forth dialogue with the children, using questions, short tasks, explanations, demonstrations and

discussions. This enables the teacher to vary the pace and direction of the lesson if necessary, and to continuously monitor the progress of the class.

Our comprehensive daily plans incorporate the 5 key principles:

- Representation and structure (effective pedagogies for modelling, concrete-pictorial-abstract approaches, effective use of manipulatives and transition between them)
- Coherence (curriculum design, progression of objectives, sequencing learning, small steps, contextualising learning between different areas of mathematics)
- Mathematical thinking (effective questioning, identifying patterns and relationships, deep understanding through reasoning and problem solving, supporting children to achieve deeper learning where appropriate)
- Variation (progression through representations using conceptual variation, progression through questioning using procedural variation)
- Fluency (efficiency, accuracy, flexibility, developing unconscious competence)

Resources

The Maths Subject Leader has responsibility for monitoring the way in which resources are stored and managed. All teachers are encouraged to use appropriate practical resources to follow the CPA (Concrete, Pictorial, Abstract) method and support children's understanding and learning. Children have access to Maths Toolboxes and additional resources are available for all children to access.

Each classroom has a "Maths Working Wall" on which key vocabulary and representations are displayed.

Assessment

Assessment has two main purposes:

- assessment of learning (also known as summative assessment);
- assessment for learning (also known as formative assessment).

Assessment of learning (AoL) – summative assessment

Assessment of learning is any assessment that summarises where learners are at a given point in time – it provides a snapshot of what has been learned. Within Abbey Village Primary School. AoL is used appropriately, e.g., to provide a Teacher Assessment judgement and grade at the end of KS1.

Assessment for learning (AfL) – formative assessment

"Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to get to and how best to get there." Assessment Reform Group, 2002.

At Abbey Village Primary School, we recognise that AfL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AfL depends crucially on actually using the information gained.

Assessment in EYFS

The assessment of mathematics is part of the overall assessment of the complete child and should be seen alongside all the other areas of development. Assessment in mathematics should reflect the general principles and procedures laid down in the Assessment Policy.

Regular observations and assessments help to ensure that children who need additional intervention to consolidate their mathematical understanding are identified and supported by appropriate interventions.

At the end of every term, teachers refer to Development Matters and identify at which stage pupils are currently working. Pupils who are struggling with specific concepts are picked up through continuous assessments and given additional support. Evidence towards these assessments is collected throughout the year. Towards the end of the academic year, teachers in Reception also make a judgement as to whether each child has met the level of development expected at the end of the EYFS for each Early Learning Goal.

Assessment in Key Stage 1/ 2

Our teaching staff use the Lancashire Learning and Progression steps to support our teacher assessment throughout the teaching of Mathematics. End of unit assessments (Red Rose) to check understanding of coverage before moving on are used throughout the term and our school uses Lancashire Mathematics end of term assessments to monitor progress and attainment.

The assessment procedures within our school encompass:

• Making ongoing assessments and responding appropriately to pupils during ‘day-to-day’ teaching. These ‘immediate’ responses are mainly verbal and are not normally recorded.

• Using knowledge of pupils drawn from ongoing pupil tracking records and the progression document to inform ‘prior learning’ at the beginning of each unit of work to guide our planning and teaching.

• Adjusting planning and teaching within units in response to pupils’ performance.

• Use of assessment questions within the first part of the lesson.

• Use of ongoing teacher assessment to identify gaps in attainment and at the end of each full term using this information to judge each child’s attainment against year group expectations.

• Use of information gained from statutory and internal school tests. Analysis is done at both a quantitative and qualitative level. Information gained is used to identify the groups and individual’s strengths and areas for improvement and also to determine which strategies or methods are particularly effective in respect of specific areas of mathematics (the how and why)

Responses to Children’s Work

We recognise the importance of responding to children’s work, whether orally or in writing. We seek to encourage children by acknowledging positive achievements. This could include praise for use of a viable method even if the end results were incorrect. Children are frequently provided with next steps to support and enhance their understanding and make links between previous and future learning. Children are given opportunities, and actively encouraged, to explain their work to others and to display their work when it seems appropriate. They are encouraged to value and respect the work of others. Live marking and feedback is given where possible, as we know that that provides the most impact for the children.

Inclusion

At Abbey Village Primary School, we aim to provide a broad and balanced education to all pupils. Quality first teaching is considered an entitlement to all pupils. Effective pupil tracking enables identification of pupils who may benefit from early ‘intervention’. Interventions are tailored to meet the needs of individuals. We also recognise, and aim to make provision for, pupils who have a particular ability in mathematics.

Monitoring

The Maths Subject leader and curriculum leader monitor the way the subject is taught throughout the school by:

Lesson observations

Regular planning scrutinies

Learning walks

Pupil interviews

Book scrutiny

The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.