

Abbey Village Primary School

Mathematics Policy



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Introduction

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics' curriculum.

The National Curriculum (2014) for mathematics describes what must be taught in each key stage. The mathematics taught and the methods used reflect both the statutory requirements and the non-statutory guidance and recommendations outlined in the following documents:

- (A) The Revised Statutory Framework for the EYFS (2012) From September (2021)
- (B) The Development Matters in the EYFS (2012) from September (2020)
- (C) Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2014)
- (D) White Rose Mathematics mixed age scheme of learning

This policy provides information and guidance for staff, governors and other interested persons.

Aims

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At Abbey Village Primary School, we aim to:

- develop a positive attitude to mathematics as an interesting and attractive subject in which all children will achieve;
- develop mathematical understanding through a small step approach to teaching – providing rigour and scaffold at the same time. encourage the effective use of mathematics as a tool in a wide range of activities within school and, subsequently, adult life.
- develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary.
- develop an appreciation of relationships within mathematics.
- develop ability to think clearly and logically with independence of thought and flexibility of mind.
- develop an appreciation of creative aspects of mathematics and awareness of its aesthetic appeal.
- develop mathematical skills and knowledge and quick recall of basic facts.

Teaching and Learning Style

The school promotes a positive mindset for mathematics. It encourages children to think for themselves, make decisions, communicate their understanding and solve problems. Our principle aim is for children to understand mathematics. To develop mathematical thinkers, children need to have: confidence, independence, resilience and perseverance. All staff have a mathematical mindset where the expectation is that all children can and will achieve. Mistakes are a learning opportunity and answers on their own are irrelevant. Although the programmes of study of the National Curriculum (2014) are organised into distinct domains we believe as the National Curriculum states 'that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasing sophisticated problems' (DFE, 2013:3) With this at the forefront of our teaching we ensure that using and applying mathematics is integrated into planning and teaching.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities that all children can access using concrete, pictorial and abstract learning activities that include variation, support and extension.

We use learning support assistants to provide appropriate support to individuals or to groups of pupils. Learning support assistants within Abbey Village Primary School are viewed as an important 'asset' to the school and as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding are constantly updated through involvement in school-based and LA led training.

Mathematics Curriculum Planning

The Early Years Foundation Stage

Work undertaken within the Early Years Foundation Stage is guided by the requirements and recommendations set out in the Statutory Framework for the EYFS (2017) and as of September 2021 we will be guided by the revised Statutory Framework for the EYFS (2021) and the non statutory guidance Development Matters in the EYFS (2020) and the White Rose Mathematics Scheme of learning for Reception classes. 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 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.

We carry out the curriculum planning in mathematics in line with the structures and recommendations outlined in the White Rose Mathematics (WRM) medium term planning documentation. Our weekly plans identify the learning objectives for each lesson taken from the White Rose Mathematics schemes of learning. Plans give details of the small steps in learning Identify the 'I DO, WE DO, YOU DO,' process to move learning forward. The headteacher and mathematics subject leader are responsible for monitoring the mathematics planning within our school.

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.

The school supports teacher assessment through the use of the White Rose Mathematics progression steps for each year group. Teachers may choose to use end of unit assessments to check understanding of coverage before moving on. The school use White Rose 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 in order 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 group’s 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).

Contribution in Mathematics to Teaching in Other Curriculum Areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening.

Computing/ICT

The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics;
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it;
- Useful suggestions as to integrating ICT is given in the ICT section of the Lancashire Interactive Planning tool (National Curriculum 2014).

Science

Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs. In science pupils will for example order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use a line graph or bar chart, and plot, interpret and predict from graphs.

Art, Design and Technology

Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared a great deal of measurement occurs, including working out times and calculating cost; this may not be straightforward if only part of a packet of ingredients has been used.

History, Geography and Religious Education

In history and geography children will collect data by counting and measuring and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals all have a mathematical basis. For older children historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know.

Physical Education and Music

Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Personal, Social and Health Education (PSHE) and Citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become

increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views.

Teaching Mathematics to Children with Special Needs

At Abbey Village Primary School, we aim to provide a broad and balanced education to all pupils. Quality First Teaching is considered an entitlement for 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.

Resources

There is a range of resources that are used consistently to support the teaching of mathematics across the school. Staff use a combination of practical and visual models to support children's learning in mathematics which is known as the CONCRETE, PICTORIAL, ABSTRACT(CPA) approach. All classrooms have a range of appropriate practical apparatus. A range of audio visual aids are also available alongside a range of software to support mathematics learning.

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.

Monitoring and Review

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the headteacher supported by the subject leader.

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.

The Mathematics subject Leader is:



Mrs Paula Roworth

Policy written: June 2020

Policy written by: Paula Roworth

Policy to be reviewed: Annually. (Developing teaching for mastery)