



# MATHEMATICS POLICY

This Policy was approved by Governors in:	March 2025
This Policy was shared with staff in:	March 2025
Implementation of this Policy will be monitored by:	SLT
Monitoring will take place at regular intervals	Termly
The Policy will be reviewed every 2 years or more regularly if needed.	
Date of next Review:	<b>November 2028</b>

## **PURPOSE**

This document is a statement of the aims, principles and strategies for teaching and learning of mathematics at Poverest Primary School and is the responsibility of all staff

## **AIMS**

At Poverest we aim to be a Creative Learning Community through the provision of a lively and engaging, well-planned learning experience. Children will be challenged to think and extend their awareness through discussion, seeking help and using resources as and when they need them. We want to foster an environment that challenges children to be curious about mathematics and to give them the opportunity to practise and apply their learning. We aim for children to:

- Be numerate and confident learners in Mathematics, who can use and apply skills and knowledge in a changing world.
- Experience and develop mathematical skills as a means of communication, information, sharing of ideas and problem-solving.
- Be provided with an exciting, suitable and safe learning environment in which they will be encouraged to grow in knowledge, ability, and confidence. That the experience is one of enjoyment, pleasure, and achievement with a sense of fun.
- Become confident in developing strategies and approaches with counting and understanding numbers, knowing and using number facts, calculating, understanding shape, measuring, and handling data.
- Develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
- Encourage the effective use of maths 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 (as detailed in 'DFE mathematical vocabulary');
- Develop ability to think clearly and logically with independence of thought and flexibility of mind;
- Develop an appreciation of creative aspects of maths and awareness of its aesthetic appeal;
- Develop mathematical skills and knowledge and quick recall of basic facts
- Develop and answer problem-solving and reasoning questions.

## **TEACHING AND LEARNING**

At Poverest we want teaching to be lively and engaging and must involve a carefully planned blend of approaches that direct children's learning. Teachers provide children with good support but require independence as and when appropriate. During these lessons, we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards, place value counters and small apparatus to support their work. The pitch and pace of the work ensure that expectations are kept high and all children make progress. The teacher will display, throughout the whole lesson, vocabulary to be used for that lesson and problem-solving questions with the learning objectives shared with the class. This will all be displayed on the Maths working wall with examples, sentence stems and examples of common misconceptions. Teachers quickly highlight children that need support and early intervention is introduced to ensure they maintain their progress. The use of helicopter marking throughout the lesson ensures that children are suitably supported and challenged.

Leading the children's learning takes into account the combination of concepts, facts, properties, rules, patterns and processes and requires a broad repertoire of teaching and organisational approaches. Good mathematics teaching requires a good knowledge of the subject, an understanding of the progression in the curriculum being taught and a recognition that some teaching approaches are better suited to promote particular learning and outcomes. To ensure whole consistency and progression, the school uses the White Rose scheme. The White Rose curriculum is a cumulative curriculum so that once a topic is covered, it is met many times again in other contexts.

In all classes, there are children of differing mathematical abilities. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work and in other lessons by organising the children to work in pairs on open-ended problems or games.

We use teaching assistants to provide appropriate support to individuals or to groups of children. Teaching assistants within Poverest 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. All staff's knowledge, skills and understanding are constantly updated through involvement in school-based led Inset.

## **CONCEPTS AND SKILLS**

The National curriculum incorporates the following strands:

- Number- number and place value
- Number- addition and subtraction
- Number-multiplication and division
- Number- fractions
- Measurement
- Geometry- properties of shape
- Geometry- position and direction
- Statistics
- Algebra and ratio and proportion in year 6.

In each year group there are objectives relating to each strand that will be covered throughout the year.

## **QUESTIONING**

Teachers will ask open-ended questions and encourage critical reflection:

- Ask questions such as 'How could you... 'Why am I doing this?' 'Can you group these...?', 'What if...', 'Why is...?' and 'How might you...?' to help children see things from different perspectives and come up with new ideas
- Encourage openness to ideas
- Be willing to stand back and not give all the answers but provide helpful prompts, if necessary
- Model flexible and independent thinking and behaviour for children.

## **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 Poverest Primary School AoL is used appropriately, e.g. to provide a Teacher Assessment level and grade at the end of KS1 and at the end of KS2.

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."

At Poverest 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 assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to children's during 'day-to-day' teaching. These 'immediate' responses are mainly verbal and are not normally recorded;
- Using knowledge of children drawn from ongoing child tracking records and from the 'prior learning' section at the beginning of each unit of work within the Renewed Framework to guide our planning and teaching;
- Adjusting planning and teaching within units in response to children's performance;
- Use of information gained from statutory and optional tests. An analysis is done at both a quantitative and qualitative level. Information gained is used to set focused curricular targets (what to teach) and also to determine which strategies or methods are particularly effective in respect of specific areas of mathematics (the how and why).

## **CURRICULUM PLANNING**

Mathematics is a core subject in the National Curriculum, and we use the National Numeracy Strategy to implement the statutory requirements of the mathematics programme of study.

We carry out the curriculum planning in mathematics in line with the structures and recommendations outlined in the National curriculum by following the maths scheme, 'The White Rose.' Lessons are planned to provide plenty of opportunities to build reasoning and problem-solving elements into the curriculum. When introduced to a new concept, children have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Alongside this, children are encouraged to use pictorial representations. These representations can then be used to help reason and solve problems. Both concrete and pictorial representations support children's understanding of abstract methods. Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. These teaching blocks are broken down into smaller steps, to help children understand concepts better. This approach means that children do not cover too many concepts at once which can lead to cognitive overload. Each lesson phase provides the means for children to achieve greater depth, with children who are quick to grasp new content, being offered rich and sophisticated problems, within the lesson as appropriate.

Our weekly plans list the specific learning objectives for each lesson, the vocabulary to be used for that lesson, key questions to be asked during each lesson and give details of how the lessons are to be taught.

The head teacher and mathematics subject leader are responsible for monitoring the mathematics planning within our school.

## **THE FOUNDATION STAGE**

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the Early Years Foundation Stage statutory framework document.

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. They also follow the White Rose scheme, which encourages problem-solving and reasoning. Children are taught key concepts using physical, pictorial, song, game, and role-playing resources

## **SEN**

Taking a mastery approach, differentiation occurs in the support and intervention provided to different children, not in the topics taught, particularly at earlier stages. The National Curriculum states: 'Children

who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.' There is little differentiation in the content taught but the questioning and scaffolding individual children receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems, which deepen their knowledge of the same content before acceleration onto new content. Children's difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support later the same day or within the lesson. A range of inclusion strategies, disseminated by the SENCO, are embedded in practice and teachers are aware of the special educational needs of the children in their Maths class, as well as those who have English as an additional language.

If a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be overseen by the SENCO, in collaboration with the class teacher and with the knowledge of SLT. Specific arrangements for the provision of children with SEND will be communicated to parents and carers during SEND reviews.

## **EQUAL OPPORTUNITIES**

The school is committed to ensuring the active participation and progress of all children in their learning. All children will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

## **CROSS-CURRICULAR LINKS**

Mathematics is a cross-curricular subject. The scheme of work not only shows the progression of learning through the school but also suggestions for cross-curricular development.

## **ENGLISH**

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

## **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;

## **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 children 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 coordinates 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 timeline, 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.

## **MONITORING AND REVIEW**

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the head teacher and link governor 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.

A named member of the school's governing body is briefed to overview the teaching of numeracy. This governor meets with the mathematics coordinator to review progress throughout the year.

## **RESOURCES**

A variety of age-appropriate resources are available in each class and are used to teach concrete mathematical concepts before moving on to pictorial and abstract methods. Additional larger resources are stored in the curriculum resource cupboard.