



# Pool House Community Primary School



## Mathematics Policy

### Aims

At Pool House Community Primary School, we thrive to provide a high-quality Mathematics education across all stages and year groups. Our aim is for children to have a coherent knowledge and understanding of Mathematics as a tool in a wide range of activities within school and in their adult life. Our teachers equip pupils with the skills to think logically and clearly with independence of thought and recalling of basic facts. We encourage our pupils to ask, solve and understand mathematical problems and work in a range of ways to develop their ability to calculate, to reason and to solve problems.

### Subject Content

#### EYFS

EYFS teach Mathematics throughout the year with opportunities for each child to use, enjoy, explore, practise and discuss with confidence, the mathematical skills and knowledge that they develop throughout their time in the foundation stage. Mathematics is taught as a whole-class or in smaller groups to enable the children to develop a coherent understanding of Mathematics. EYFS follow Development Matters in the EYFS curriculum and the Revised Statutory Framework for the EYFS to enable all areas of Mathematics are taught to a high-standard of teaching.

#### Key Stage 1

As stated in the National Curriculum, the principal focus of Mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (for example, concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

## Lower Key Stage 2

As outlined in the National Curriculum, the principal focus of Mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

## Upper Key Stage 2

As stated in the National Curriculum, the principal focus of Mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.

With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

## **Teaching and Learning**

Our principle aim is to develop children's knowledge, skills and understanding in Mathematics. We recognise the fact that in all classes there are children of widely different abilities in Mathematics and we seek to provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child.

We achieve this by:

- Setting tasks of increasing difficulty. Not all children complete all tasks;
- Grouping children by ability in the room and setting different tasks for each ability group;
- Providing resources of different complexity depending on the ability of the child;
- Using teaching assistants to support children individually or in groups.

At Pool House Community School, we are committed to teaching a well-rounded curriculum to children of all abilities. The class teachers take the ability of children into account when planning and teaching lessons so that learning matches the individual needs of each child. Each lesson has a high proportion of whole-class and group-direct teaching. During our daily lessons, we ask children to answer as well as ask mathematical questions. They have the opportunity to use a wide range of resources to support them with their work. Teaching assistants are also used to support children throughout differentiated groups or mixed ability activities. Teaching assistants work alongside the class teacher to support the learning of each child to a high-standard

## **Curriculum Planning**

Mathematics is a core subject in the National Curriculum and at Pool House we use the National Curriculum in combination with the Lancashire KLIPS for Mathematics, as the basis of our curriculum planning. This ensures that the appropriate objectives in the National Curriculum are covered. We also have access to 'Active Learn' where class teachers have access to objectives, ideas for planning and resources which are coherent to Lancashire KLIPS.

Our medium-term plans give details of each unit of work, including learning objectives, possible teaching activities, and learning outcomes. This is planned and created by the class teacher and for assessment purposes, is annotated with dates and teaching notes. These plans are kept by the class teachers and be shared with teaching assistants, but are to be available for the mathematics subject leader or a member of the SLT to access if needed.

### **Cross Curricular Links**

Mathematics naturally contributes significantly to the teaching of other subjects in our school. Mathematics is used within computing, science, humanities, physical education, art and design and design technology.

Computing can be used within Mathematics as games and activities can be used online and in computing lessons, children are required to be able to complete coding and collect data. In Science, scientific investigations or experiments require one or more mathematical skill including classifying, counting, measuring, calculating, estimating and recording in tables and graphs. Art and design can require patterns, constructions and properties of shapes including symmetry. Designs may need enlarging or reducing. In design technology, measurements are used for preparing and making food, including doubling of measurements and using ratio. In humanities, children will collect data, use measuring apparatus and plot and read co-ordinates on maps. Physical education can include counting, timing, movement and position, direction and measuring of time.

The work that children do outside their daily Mathematics lessons encourages independent study and helps them to become increasingly confident in adapting their knowledge and skills to other areas of the curriculum.

### **Assessment**

Each class teacher assesses the children's work by making informal judgements during observations in each lesson. It is the responsibility of the class teacher to ensure that children's work is marked regularly, and that purposeful comments or further questions are implemented when appropriate. In some instances, the class TA may teach and assess Mathematics during smaller group activities or

interventions. In these instances, the class teacher and TA will work closely together in order to form a judgement based upon the observations of the TA and the content of work recorded. For each unit, the class teacher must record how many children have achieved the level of attainment expected in the National Curriculum, by highlighting the KLIPS grids. This information is kept in the Class assessment and curriculum file and passed onto the next teacher at the end of each academic year.

SATS are carried out at the end of years 2 and 6 to assess the children against the standards included in the National Curriculum. Multiplication tests are also carried out at the end of Year 4 where children are expected to have learnt and be able to recall their multiplications up to and including the 12 multiplication tables. These tests will provide Lancashire County Council and the school with data to show progression and the levels the children are working at. Results will be given to parents at the end of the year with their child's report.

## **Resources**

There are resources accessible in school for the areas of the curriculum covered across all key stages. The subject leader has also comprised a list of suggested online resources for each subject area that each class teacher may explore and use if wanted. In an annual Mathematics audit, the Mathematics subject lead always asks to staff to request resources that they may need for the following year. The list of requested resources is then reviewed by the Mathematics leader and Head teacher and acted on where they feel necessary.

## **Monitoring and Reviewing**

It is the role of the Mathematics subject leader to provide support for colleagues, to be informed of curriculum developments and for providing direction for Mathematics in school. The subject leader is also tasked with ensuring that each area of the 2014 National Curriculum is covered within the daily lessons carried out across school. The subject leader, Assessment leader or member of the Leadership Team will check the Curriculum coverage, assessment and accuracy of lesson taught once annually and feedback will be provided to the Headteacher at the end of each academic year, indicating key strengths and weaknesses in the subject within school and areas for development within the future.