

Newbold and Tredington C of E Primary School and Day Nursery

Creating a chance to SHINE everyday

Maths Policy

This policy was ratified: July 2018

And will be reviewed: July 2021

Signed by Headteacher: Samantha Welsby

Signed by Chair: Dave McWhirter

Signed by Subject Lead Governor: Barney Hatch

Aims and objectives

1.1 Mathematics teaches children how to make sense of the world around them through developing their fluency in the fundamentals of mathematics, reasoning by investigating lines of enquiry and making conjectures from their discoveries and solving problems. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

1.2 Our objectives in the teaching of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- To develop logical thinking and reasoning skills through a natural curiosity and investigative approach;
- To promote confidence and competence so that children are 'proud to shine' about their achievements with numbers and the number system;
- To develop a thorough knowledge and understanding of the number system;
- To develop the ability to solve problem through decision making and reasoning in a range of contexts;
- To develop a practical understanding of the ways in which information is organised and presented;

- To explore features of shape and space, and develop measuring skills in a range of contexts;
- To understand the importance of mathematical skills in everyday life;
- To develop the cross-curricular use of mathematics in other subjects.

2. Teaching and learning style

2.1 Teachers at the school use a variety of teaching and learning styles in delivering mathematics lessons. Our principal aim is to continually develop children's knowledge, skills and understanding by encouraging them to make links across multiple areas of mathematics so that they can develop in fluent mathematicians. Teachers and support staff encourage children to be curious and challenge themselves in daily lessons by allowing them to investigate an area of mathematics through the answering and asking of questions. We ask our children to reason in each lesson by encouraging them to make links between mathematical ideas and demonstrate their understanding in multiple ways: abstract calculations, pictorial diagrams, verbal reasoning, written word and drawing on their own personal life experiences. Children always have access to a wide range of resources to help them demonstrate their thinking, or to further and deepen their understanding which may include counters; balancing equipment; place value counters; Numicon; Cuisenaire rods and multilink bricks amongst others to help show different representations of their ideas.

2.2 In all classes, there are children of differing mathematical ability. We recognise this and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. Throughout lessons, strategies are used to ensure that each child is challenged appropriately. Tasks are chosen that have a 'low threshold, high ceiling' approach so that all have the opportunity to access a problem whilst providing opportunities for others to deepen their understanding without undertaking a more mathematically challenging task. Children are often asked to work independently, however developing fluent mathematicians requires the use of meaningful discussion within the mathematical classroom. Therefore children are equally often organised into groups, pairs or even as a whole class to provide opportunities where they can share, discuss, challenge and generate ideas. We also have the use of Learning Support Assistants within class to aid those that may need some individual support.

2.3 Children are also given opportunities each week to develop their flexibility in working with number through designated fluency sessions. In these sessions, children are encouraged to work mentally to find relationships and patterns between numbers so they can make connections between numerical ideas more easily.

2.4 Each week, children are set a maths challenge based loosely around number facts such as number bonds, times tables, and number equivalents. Their progression within these is monitored termly by the maths subject leader to ensure all children are progressing appropriately. Alongside this, children have access to an online platform called MyMaths where teachers can set online mathematical homework to be inline with their current learning and be able to monitor their progress remotely.

3. Mathematics Curriculum Planning

3.1 Mathematics is a core subject in the National Curriculum and we use this as a basis for implementing the statutory requirements of the programme of study for mathematics.

3.2 We carry out the curriculum planning in mathematics in three phases (long term, medium term and short term). Our long term planning give details of the main teaching objectives for each term and gives a focus for what is taught each week on the medium term planning which in turn helps teachers to structure appropriate short term lessons.

3.3 It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans contain the learning objectives for each session and give details for how the lessons are structured and delivered. The class teacher keeps these plans and shares them with support staff appropriately.

3.4 We teach mathematics in our reception class. As the class is part of the Foundation stage of the National Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children aged three to five. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

4. Contribution of mathematics to other areas of the curriculum

4.1 English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. We aim to link aspects of our mathematical teaching to our current topic which also links with the themed English lessons. In mathematics lessons we expect children to independently read, interpret and discuss problems in order to identify and understand the mathematical skills required. When the children reason, they are also developing their speaking and listening skills by interacting with each other to discuss key ideas; learning how to structure and organise their ideas both verbal and written. Children in the lower years also enjoy stories and rhymes that rely on

counting and sequencing whereas older children will be encountering and using complex mathematical vocabulary and diagrams when analysing non-fiction texts.

4.2 Science

During science lesson, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

4.3 Computing

Children use and apply mathematics when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables to explain results, using standard measures for angles and distances while using simulations to identify patterns and relationships.

4.4 PSHE and Citizenship

Mathematics contributes to the teaching of personal, social and health education and citizenship. The work that the 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. We present older children with real-life situations in their on the use of money. The way in which we deliver our mathematics lessons supports the social development of our children through encouraging a collaborative and conjecturing atmosphere in our classrooms where children feel safe and secure to make suggest and challenge other's ideas.

5. Mathematics and inclusion

5.1 At our school, we deliver mathematics to all children regardless of their ability level and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make at least good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talent as well as those learning English as an additional language, and we take all reasonable steps to achieve this.

5.2 When progress falls significantly outside of the expected range, the child may have special educational needs. Our continual assessment process looks at a range of factors -

classroom organisation, teaching materials, teaching style, differentiation - so that we take some additional and alternative action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensure that the delivery of mathematics across the school matches every individual child's needs.

6. Assessment for learning

6.1 Teachers are continually assessing children's work in mathematics. We use short term assessments to help us adjust daily lesson plans as well as targeting children that could do with focused support after particular lessons. These short term assessment are closely matched to the teaching objectives and shared with the children through our marking procedure.

6.2 We also undertake longer term assessments through each term aiming towards the end of the school year. These are used to assess progress against school and national targets. This helps teachers to create individual summaries of children's attainment and progress over the year which is shared with parents and carers. This information is also passed onto the next class teacher to help them prepare work accordingly. We use the statutory national tests for children in Year 2 and Year 6 along with teacher assessments to monitor both in-year and key stage progress.

7. Resources

7.1 All classrooms have a mathematics working wall in order for teachers to display modelled work and key reminders - especially for modelling and suggesting the language of reasoning. All classrooms have been equipped with boxes for immediate mathematical equipment for the children to use on their tables i.e. counters, dienes, dice, coins etc. Aside from this, the school has a central store of other equipment for all classes to use, which may include Numicon, Cuisinaire rods, Lego bricks, floor tiles and others.

8. Monitoring and reviewing

8.1 Monitoring of the standards of children's work and of the quality teaching in mathematics is the responsibility of the mathematics subject leader. The work of the subject leader also involves supporting colleagues in the teaching and delivering of mathematics, being informed about current developments in the pedagogies, and providing a strategic lead and direction for the subject across the school. The mathematics subject leader gives the Headteacher and the designated Maths Governor a regular summary in which she evaluates the strengths and weaknesses in the subject and progress on the action plan. The Headteacher allocates regular management time for the mathematics subject leader. The work undertaken in this time is detailed in the monitoring schedule.