



## Mathematics Policy

September 2019

### THE NATURE OF MATHEMATICS

“Mathematics is a creative and highly inter-connected 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. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.”

(The National Curriculum for Mathematics 2014)

## Intent

The intent of our mathematics curriculum is to design a curriculum, which is accessible to all and will maximise the development of every pupils' ability and academic achievement. We deliver lessons that are creative and engaging. We want our pupils to make rich connections across mathematical ideas to develop mastery in fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

We intend for our pupils to be able to apply their mathematical knowledge to science and other subjects. We want them to know that it is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. As our pupils progress, we intend for our pupils to be able to understand the world, have the ability to reason mathematically, have an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Using the Programmes of Study from the National Curriculum for Mathematics we aim to develop:

- An enjoyment and curiosity of mathematics and for children to feel confident to become successful;
- Children’s abilities to use and apply mathematics to solve problems in both the classroom and in ‘real life’ contexts;
- A confidence to communicate ideas in written form and orally;
- Independent and collaborative ways of working, encouraging children to share ideas and solve problems together;
- A wide range of mathematical vocabulary to be modelled and used in the classroom environment;

- The children's ability to recall mental facts accurately and quickly and using effective written calculation methods;
- Children's logical thinking, reasoning and ability to problem solve as transferable life skills.

## **Implementation**

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader. There is a daily mathematics lesson of between 45 and 60 minutes. A typical lesson involves all classes following the White Rose Scheme of learning which focuses on core topics to build deep understanding.

During these lessons children engage in:

- The development of mental strategies
- Written methods
- Practical work
- Investigational work
- Problem-solving
- Mathematical discussion using precise mathematical language.
- Consolidation of basic skills and routines

Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. Areas of provision within the classroom support maths, ensuring children are able to access throughout the day to practise and develop skills being taught. In addition consistent, daily maths lessons take the form of direct teaching, which is followed up by enhanced activities placed in areas of provision in the classroom which may be accessed independently or supported by an adult.

## **Mastery in Maths**

Mathematics Mastery is the next step in our commitment to raise standards across the school in Mathematics. The Mastery-learning model forms the basis of our approach to traditional teaching. This means spending greater time going into depth about a subject as opposed to racing through the things that all children should know. Previously, racing through content lead to some children having large gaps in subject knowledge because the concept they had just learnt was either too big or learnt too quickly. As a primary school, it is our duty to ensure that children have an absolutely solid, concrete understanding of subject knowledge and skills as well as being emotionally resilient for secondary school.

Now, we have the confidence to take learning at a steadier and deeper pace, ensuring that no child is left behind, as well as providing deeper and richer experiences for children who are above the national expectation for their age.

We focus on all children achieving what is expected of their age group and not going beyond this. Evidence shows that children need to be able to understand a concept, apply it in a range of situations and then be creative to really understand it. Simply going beyond their age group does not guarantee they understand something, it just means they have heard it.

At our school children will spend time becoming true masters of content, applying and being creative with new knowledge and skills in multiple ways.

In short, this means working towards:

- Teach less, learn more: less teacher talk and more evidencing learning and progress
- No child left behind: all children are enabled to keep up every day.
- Space and time to experience and apply, with all children entitled to additional support to ensure they do not fall behind or to go deeper
- Understanding real life applications wherever possible to make learning relevant and not abstract; nothing should be taught without a purpose.

All of this means that there is a change in the way we teach and assess children, most notably in how we organise the children's learning and how we report their progress to parents.

We will be doing more of this:

- Teaching all children in class, together, most of the time
- Verbal feedback during lessons, shorted comments in books and more ticking of correct concepts
- Spending longer on one idea
- Daily or weekly mini assessments with a few formal tests over the year

And less of this:

- Formal marking with lots of written feedback and highlighting
- Covering lots of ideas in one week

This approach is seen as good practice. It is promoted by the government and seen as the best way to deliver the new national curriculum.

### **Children's Records of Work**

Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording. Children are encouraged to use mental strategies before resorting to a written method. All children are encouraged to work tidily and neatly when recording their work. When using squares one square should be used for each digit.

EYFS record informally within the setting. For example: - on the playground - on whiteboards - using jigsaws - physically ordering numbers. Staff in Foundation use photos to ensure records of each child's achievements are maintained.

## **Planning**

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in the school.

Years 1-6 use the White Rose scheme of learning as its medium term planning. This provides a detailed, structured curriculum which is mapped out across all phases, ensuring continuity and supporting transition. Other resources are drawn upon at teachers' discretion (with guidance from the maths co-ordinator) – such as Power Maths - to supplement White Rose.

EYFS planning is based on the Early Learning Goals (Number, Shape Space & Measure).

Short term planning is recorded weekly using the agreed school format. These weekly plans identify the areas of learning and lesson objectives; teaching input and activities; and deployment of additional adults. They are placed on the planning file on the server each week.

## **Resources**

The National Curriculum for Mathematics 2014 is our main planning and teaching resource, learning objectives for teaching in the daily maths lesson will be from this.

In order to support the delivery of maths lessons to all children the school has a large range of resources available. Within the classroom maths resources are available to children at all times, these include basic resources such as number lines, 100 squares, rulers, counters, numicon, etc. Other specific resources (eg, balance scales, meter rulers) are made available as required.

We recognise the importance of a stimulating learning environment. The school provides an environment, which is rich in a wide variety of print, pictures, diagrams, charts, tables, models and images. Each classroom has a mathematical display area, which includes a working wall with mathematical vocabulary, visual aids and interactive activities where appropriate.

## **Impact**

- Short term

Children's classwork is assessed frequently through regular marking, analysing children's errors, questioning and discussion. Children's work is marked and feedback is given with next steps as in line with the marking and feedback policy.

- **Medium Term**

Each term children in each class are assessed using the PUMA tests. These materials are used alongside judgements from class work to form a teacher assessment for each child. Pupil Asset is used to track progress against each objective. A pupil progress meeting to review the accuracy of these judgements is held each term.

- **Long Term**

The following tests are also carried out annually:

- SATs at the end of Y2 and Y6
- The children are assessed in the early years using the Foundation Stage Profile

### **Contribution of Maths to teaching in other curriculum areas**

Mathematics is a tool for everyday life. It is a network of concepts and relationships and is used to analyse and communicate information and ideas in practical tasks and problems. By making links to other subjects at the initial planning stage we aim to provide real context in which to apply skills taught during the maths lessons.

### **Inclusion**

Children with special educational needs and IEPs:

- Within the daily mathematics lesson teachers provide activities to support children who find mathematics difficult. Children with SEN are taught within the daily mathematics lesson and are able to take part at their level through the support of Teacher or Teaching Assistant and appropriate activities and resources.
- Where applicable children's IEPs will incorporate suitable objectives from the Maths curriculum.
- Intervention Groups will take place at times throughout the year, in order to give further support to children working below national expectations.

All children at Longwood Primary School have an equal entitlement to access the Maths curriculum and make progress in order to attain the best they can in the subject.

### **Monitoring Teaching and Learning**

This will be undertaken by the Subject Leader and other members of SLT.

Areas to be monitored will be decided at the beginning of each term and will be recorded on the Monitoring Calendar so that staff are informed. Results of any monitoring will be fed back to staff quickly and to SLT at their meetings so that any action required can be carried out effectively.

## **Roles and Responsibilities**

### **1. Subject Leader:**

- Supports teachers in their planning and teaching;
- Lead by example in the way they teach in their own classroom;
- Prepare, organise and lead INSET, with the support of the Head teacher;
- Monitor different aspects of maths teaching and learning feeding back to SLT and staff on findings and future actions.
- Attend INSET provided by LA consultants and Maths Hubs;
- Be available to discuss with the head teacher, class teachers, parents and Maths governor the progress of maths in the school.

### **2. Class Teachers:**

- To deliver a Daily Maths lesson to their children which is engaging and motivating, is informed by the National Curriculum for Mathematics 2014 and is accessible to all children.

### **3. Children:**

- To develop their skills, understanding and attainment in Maths through engagement with the lesson, behaviour conducive to learning, independent work and thought and confidence to challenge or ask for help.

### **4. Parents / Carers:**

- To support their children's learning in maths by taking an interest in their child's progress, encouraging the children to complete maths homework and having a good relationship with the class teacher so that queries and problems regarding maths can be dealt with easily.

Review Date: September 2020