



Learning happily together

# Mathematics

## Subject Intent

At Lowe's Wong Infant School, it is our intent to provide children with a high-quality, broad and challenging Mathematics curriculum that deepens understanding and builds stamina, resilience and love for the subject.

Maths learning will be planned and taught in a progression of fluency, reasoning and problem solving from Foundation through to Year Two. When working on fluency, children will use concrete apparatus to support learning and make connections. They will use pictorial representations to develop understanding before moving onto abstract thinking and learning.

Children will be able to reason mathematically by justifying, making links to known facts, or providing proof using mathematical language. Understanding of concepts will be challenged through solving problems by applying their mathematical knowledge. Links within other subjects will be highlighted and skills and mathematical knowledge will be applied. We will equip children with the foundations of mathematics that are essential to everyday life.

By working across different representations of learning and using resources, we aim for our children to be confident mathematicians who are independent, inquisitive and not afraid to take risks. We use mistakes and misconceptions as an essential part of learning and encourage a resilience that fosters a positive 'can do' attitude.

The EYFS and National Curriculum requirements of maths are taught using the White Rose scheme and the NCETM Mastering Number Programme.

We want to enable our children to leave Lowe's Wong Infants School being fluent in the fundamentals of Mathematics, developing their conceptual understanding and the ability to recall and apply mathematical knowledge rapidly and accurately. Through this they will have an understanding of the importance of Maths skills and knowledge in the wider world.

## Subject Implementation Plan

### Timetabling

Maths is taught everyday in all the classes. In F1 maths is taught through daily songs and rhymes, continuous and enhanced provision and meaningful adult interactions. In F2 the White Rose maths scheme provide the children with a daily input lasting about 15 minutes followed by a weekly, small group, teacher led task. There will also be opportunity for independent learning through continuous and enhanced provision both in the classroom and in the courtyard. In KS1 the White Rose maths scheme provides a daily Maths lesson lasting about 45 minutes.

All classes follow the NCETM Mastering Number planning to provide four sessions per week of number fluency and reasoning. In F2 this is taught as a separate 10 minute session, in KS1 this precedes the daily Maths lesson (10 minute session).

### **How Maths is taught**

In F1 the children regularly sing number songs and rhymes, they are encouraged to count how many children are in school each day. Following the White Rose Scheme there are daily opportunities for mathematical learning through play in the classroom. In F2 Maths is taught using the sequence and structure of the White Rose Maths scheme. The daily lesson starts with a 'let's learn' section and then a 'your turn' section where the children are involved in a practical task related to the day's learning objective. During a week all the children complete a guided task with the class teacher or TA that consolidates and builds on the learning in the main teaching. The children in F2 are able to continue to develop their mathematical skills through carefully planned independent tasks during Explore and Investigate time.

In KS1 the children have a daily maths lesson based around the White Rose teaching slides. The lessons in Key Stage One follow a 'ping-pong' structure which allow the children to listen, practice, record and then come back to the carpet to listen again. Manipulatives are used to allow the children to practice new learning as well as having the opportunity to record mathematically using the workbooks or a squared paper maths book. In KS1 children use the Flashback 4 slides to revisit previous learning and the True or False slides to develop reasoning skills.

Learning in parallel classes will mirror each other, linked to the block of learning. However, individual classes may have extra lessons designed for them if formative assessment identifies the need. Teachers use their knowledge of the class to decide whether to split the steps into smaller chunks of learning and to decide how quickly to move through the suggested sequences. Teachers enhance the learning opportunities by using high quality and appropriate resources, giving the children time to revisit a concept or address any misconceptions.

The children, especially in KS1, have many opportunities to work with a 'talking partner' during a maths lesson so that they can explain their thinking to a friend and practice reasoning about their calculations. Staff regularly challenge the children asking 'how do you know?' or 'prove it?' to encourage confident reasoning and the use of mathematical vocabulary.

### **Resources**

White Rose teaching slides and resources through an annual membership.

White Rose workbooks for all KS1 children.

Mastering Number resources and teaching notes and slides – on Sharepoint, 1 box of Rekenreks per year group

Blue squared paper maths books for children's own recording of work in KS1.

In F2 the children have a plain paged maths book.

A range of mathematical resources such as cubes and number lines in each classroom.

Two 'wardrobes' of mathematical resources on the Year Two corridor.

Access to a wide range of on-line games and resources.

### **Marking, feedback and assessment**

In KS1 children's work is marked where possible during the lesson with a tick if correct and a dot if a correction is needed. The children make corrections using a purple polishing pencil. The Learning Objective at the top of the daily workbook page is RAG rated and the children are expected to write the short date at the start of each lesson. If work is being recorded in the blue maths books there will be a short date and a clear Learning Objective.

Feedback will be during the lesson through a verbal discussion with the child or through a comment in their books, using the smiley face for positive comment linked to the learning objective and an upward arrow if there is a next step. Reversals of numbers will be addressed as part of the marking.

Informal assessments are made of the children throughout a Maths lesson and teaching will be adapted in the moment to address any misconceptions or gaps in learning.

White Rose end of term assessments are used in Key Stage 1, alongside observed classroom practice, to enable teachers to complete termly data drops on Scholar Pack. This data is analysed by the Maths Lead, and any patterns or anomalies are discussed with staff.

In F2 teachers use immediate verbal feedback as appropriate. In the Maths books the Learning Objective is RAG rated and comments or transcripts of the children's discussions made if appropriate.

In F1 children are given constant verbal feedback and staff are skilled at moving the learning on through interactions and discussions.

In Foundation assessments are made informally throughout the term, allowing teachers to complete termly data drops on Scholar Pack. This data is analysed by the Maths Lead, and any patterns or anomalies are discussed with staff.

### **Recording work**

In F1 photographs are taken (when appropriate) of mathematical work and annotations made in their Learning Journey books. Informal observations are also made and these are stuck into Learning Journey books too.

In F2 the children have the opportunity to record their own work where appropriate. However, much of the work will be of a practical nature and therefore staff take photographs to evidence work and include an annotation of any discussions.

In KS1 children work neatly in their workbooks, writing in pencil. In some instances, there might be photographic evidence of practical work included in their blue maths books. Additional worksheets are used if appropriate and the children have opportunities to make their own jottings or more formal recordings of mathematical tasks.

### **Learning Environment**

All KS1 classrooms have a maths display/working wall. This reflects the current block of teaching and may include 100 squares, key vocabulary, pictorial representations to consolidate learning or models of working methods.

In F1 & F2 numbers are visible to the children in the classroom environment, there are number lines, a 100 square, and the Numberblock characters.

### **Equality and Diversity**

Through the use of a range of manipulatives and appropriately adapted resources all children have equal access to the Maths Curriculum.

The White Rose slides used to support Maths teaching depict a diverse representation of children.

### **Curriculum Enrichment**

Maths is not restricted to a maths lesson. There are opportunities to develop mathematical thinking through our enquiry themes and through daily routines. This may include days of the week, counting children, how many dinners/sandwiches each day, making groups of children etc. It will also include measuring, shape etc in art/DT lessons, counting and keeping scores in PE lessons and scientific work. Children in Key Stage 1 are offered the opportunity to join an after school Spaghetti Maths club (led by an outside provider). There is a cost to this club.

### **SEND**

All children have equal access to the Maths Curriculum through quality first teaching. Support is given where required to ensure all children can participate in a broad and varied curriculum as part of an adaptive teaching strategy.

Some examples of this are:

Allow sufficient time for the children to talk through and share their ideas (with an adult when available or through talk-partners)

Discuss and display key vocabulary together with its meaning in the classroom - practise saying it together and refer to it regularly during the lessons.

Introduce each piece of equipment – name it, explain how to use it to support learning.

Repetition of key knowledge and facts is required to embed and support fluency.

Allow for movement breaks for those who have additional sensory needs or struggle with attention to give them time to self-regulate. These learners could be given jobs such as handing out resources.

Use alternative methods to record children's knowledge e.g. orally, adult scribe, pictorially.

Additional adults may be used to provide scaffolding and support if appropriate.

We have access to Fluency Bee as a SEND resource to revisit number fluency and also the 5 minute box.

### **Behaviour**

All children will demonstrate the 3 things for good behaviour during Maths lessons – good sitting, good listening, and good looking.

Children will be taught how to use whiteboards and pens sensibly so that they will not be a distraction when not in use and will be placed on the carpet or in laps and will not be fiddled with.

Children will be taught how to use manipulatives when instructed and not to fiddle with them when the teacher is talking. They will be taught how to look after the resources and tidy them away after a lesson.

During workbook time at tables, teachers will use the visual prompt cards – Talking Turtles, Whispering Whales and Silent Snails to determine the level of noise for the activity.

Good behaviour will be rewarded in line with the school's behaviour policy.

It is expected that teachers will respond to any misbehaviour promptly during Maths lessons by following the school's agreed behaviour policy of warnings, reflection and time outs.