

# **The Bellbird Primary School**



## **Maths Policy**

**April 2020**

**(To be reviewed June 2022)**

## **Introduction**

This document is a statement of the aims, principles, strategies and procedures for maths throughout the school. The document describes the strategy agreed by The Bellbird Primary School Governing Body for the delivery of maths.

The aim of the Bellbird Primary School is to support all children's access to excellent teaching, leading to exciting and successful learning in maths.

## **Aims**

The National Curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

## **Through:**

- Modelling problems with concrete apparatus and images like the bar model.
- Developing mathematical language which children can use appropriately.
- Using IT as a tool to enhance learning.
- Helping children to become independent learners.
- Giving a real life context to learning in maths.

## **Organisation**

### **There will be a daily mathematics lesson.**

The programmes of study for mathematics are set out year-by-year for Key Stages 1 and 2. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

### **Key Stage 1**

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 with practical resources (e.g. concrete objects and measuring tools). Children are encouraged, through the mastery approach, to develop conceptual understanding using visual representations, including bar models (part-whole models). They are taught all three areas of maths (fluency, reasoning and problem solving) through the 'build it, draw it, say it, write it' approach.

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.

### **KS1 POS**

Number and Place Value

Addition and Subtraction

Multiplication and Division

Fractions

Measures

Geometry-properties of shapes

Geometry- position, direction and motion

Data

### **Lower Key Stage 2 – Years 3-4**

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 continue to develop their ability to solve a range of problems, explaining their reasoning. Teaching should also ensure that pupils draw with increasing accuracy 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 12x 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

### **Lower KS2 POS**

Number, Place Value and Rounding

Addition and Subtraction

Multiplication and Division

Fractions (Year 4 Decimals)

Measures

Geometry-properties of shapes

Geometry- position, direction and motion

Data

### **Upper Key Stage 2 – Years 5-6**

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.

## **Upper KS2 POS**

Number, Place Value and Rounding  
Addition and Subtraction  
Multiplication and Division  
Fractions and Decimals (Percentages Year 6)  
Ratio and Proportion (Year 6)  
Algebra (Year 6)  
Measures  
Geometry-properties of shapes  
Geometry- position, direction and motion  
Data

## **Early Years Foundation Stage (EYFS)**

Mathematics development involves providing children with opportunities to practise and improve their skills in counting numbers, calculating simple addition and subtraction problems, and to describe shapes, spaces, and measures

**ELG (Early Learning Goal) 11 Numbers:** Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

**ELG 12 Shape, space and measures:** Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Children use their knowledge and skills in these areas to solve problems, generate new questions and make connections across other areas of learning and development. Mathematical understanding will be developed through stories, songs, games and imaginative play.

## **Planning**

All teachers use White Rose Maths Hub materials as a basis for their planning. White Rose is recommended by the National Centre for Excellence in the Teaching of Mathematics. The hub has developed a wide range of training, support and free resources, all of which support a teaching for mastery approach. The mastery based schemes of work and assessments are being used by thousands of schools across the UK.

## **Assessment and Record Keeping**

The children will be assessed on a continuous basis using assessment Materials from White Rose as well as NFER and Assertive Mentoring tests, and diagnostic assessment for interventions such as Sandwell Maths tests. In addition, formal assessments will take place (see Assessment Policy):

- EYFS Profile
- End of Key Stage SATs for Year 2 and 6
- NFER tests or equivalents will take place in Years 3, 4 & 5

Progress will be tracked on a termly basis using Pupil Progress meetings.

## **IT**

Opportunities to use IT to support teaching and learning in Maths will be planned for and used appropriately.

## **Home/School Link**

The link between home and School is forged in a number of ways. In Key Stage 1 and 2 homework is assigned on a regular basis (see Homework Policy). This will support the Mathematics work in the classroom. The on-line learning platform Mathletics has been introduced to KS1 and KS2 to allow children to engage in Maths learning at home that can be monitored within school. The platform “TT Rock Stars” has also be introduced to aid fluency in the recall of number facts. To give more detailed outlines of the child’s progress, biannual reports and formal meetings are arranged, but informal meetings are encouraged when needed.

## **Special Needs**

The provision for children with special needs is detailed in the Inclusion-SEN Policy. Central to this is the early identification, intervention and careful planning for variation within the mastery schemes of learning. We are able to administer the Sandwell test at both Key Stages to identify children with specific learning difficulties in Maths and then make provision for these children through intervention programmes such as 1stClass@Number 1 and 2 and Success@Arithmetic.

## **Monitoring and Evaluation**

Monitoring and evaluation of mathematics teaching in the School is carried out by the MSLs and the SLT team. When possible, pupil interviews will take place along with scrutiny of work. Planning is monitored across both key stages by the MSLs and SLT team.

## **Role of subject leader**

The subject leader will be responsible for improving standards of teaching and learning in Mathematics through:

- Pupil progress.
- Provision of maths (including intervention and support programmes).
- The quality of the learning environment.
- Taking the lead in policy development.
- Auditing and supporting colleagues in their CPD.
- Purchasing and organising resources.
- Keeping up to date with Maths development.