

# Tunbury Primary School

## Policy Document for Mathematics

### **Our Ethos**

At Tunbury, we aim to be proactive in helping each child to achieve the key elements to well being in childhood and later life. These are:

- be healthy
- stay safe
- enjoy and achieve
- make a positive contribution
- achieve economic well being

**We value diversity and promote equal opportunities for all.**

*“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.”*

DFE, Mathematics Programmes of Study (2013)

### **Rationale:**

Children need to be equipped with mathematics skills in order to successfully approach problem solving in relevant and varied contexts. They need opportunities to develop concepts of mathematics through collaborative speaking and listening in order to rationalise ideas and processes.

### **Aims**

- To develop positive attitudes to mathematics in all children.
- To create an atmosphere in which children are confident and do not fear making mistakes.
- To ensure that children experience a broad range of mathematical experiences and develop awareness of mathematics as a powerful tool and essential element of communication across the whole school curriculum and in everyday life.
- To develop children’s mathematical vocabulary to ensure that they understand and can use the precise language of mathematics and talk confidently about their work.
- To teach the basic skills and concepts which enable children to tackle tasks confidently and give opportunities to apply skills in various situations with various resources, including the use of increasingly complex measuring instruments.
- To ensure children develop firm visual images and become increasingly competent in using appropriate estimation and approximation when tackling mental mathematics.
- To ensure children master skills, routines and techniques that they need in using and applying mathematics.

### **Planning**

#### **Key Stages 1 & 2**

Mathematics is a core subject in the National Curriculum and we use the Focus Maths schemes of work alongside the 2014 Maths National Curriculum guidance to ensure that the the statutory requirements of the programmes of study for mathematics are being taught rigorously.

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

Practitioners in the Reception classes follow the 'Statutory Framework of the Early Years Foundation Stage' (2014) and use 'Development Matters in the Early Years Foundation Stage' (2012) to plan appropriate mathematical experiences.

### Curriculum Planning

Curriculum planning for mathematics is in three phases (long term, medium term and short term).

Long term planning – In Key Stage 1 and Key Stage 2 the 2014 Maths National Curriculum guidance alongside the Focus Maths schemes of work are used to generate a detailed outline of what is to be taught over the period of each academic year.

In the EYFS mathematics is one of the four specific areas through which the prime areas of learning are strengthened and applied. Children are given opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces and measures.

Medium-term planning - plans give details of the main teaching objectives for each term. They ensure an appropriate balance and distribution of work across each term and outline the Units to be taught and highlight cross-curricular links within our creative curriculum approach.

Short term planning- weekly plans outline the specific learning objectives for each lesson and give details of how the lessons are to be taught. Each lesson's objective takes the form of a question. These 'Learning Questions,' as they are referred to are phrased to ensure that the students understand the application of the Maths they are learning.

The expectation is that the majority of students will move through the lesson at the same pace. Each lesson is to be planned as a 'journey.' The first part of the lesson will provide an opportunity for students to practice and consolidate existing knowledge. The students, when ready will then move onto an activity where they have the opportunity to build upon knowledge. Finally, the students will have the chance to apply new knowledge and work at greater depth.

If the teacher feels that students need additional support to be able to access the lesson they must plan and carry out pre-lessons, so that by the time the student participates in the maths lesson they are prepared and able to keep up with their peers. The teachers are to evaluate each lesson and record any pre-teaching information on the weekly plans.

Weekly mathematics plans are monitored according to the Monitoring Policy.

### Teaching and learning

At Tunbury our principal aim is to develop children's knowledge, skills and understanding in mathematics. Mathematics teaching at all levels should include opportunities for:

- exposition by the teacher
- discussion between the teacher and pupils and amongst the pupils
- appropriate practical work
- consolidation and practice of fundamental skills and routines, including mental arithmetic
- problem solving, including the application of mathematics to everyday situations

Children are encouraged to ask as well as answer questions and to use the correct mathematical vocabulary. Whenever possible we encourage the children to use and apply their learning in everyday situations.

Our teaching aims to develop children's independence in learning, their thinking skills and ability to communicate and we aim to follow the recommendations as outlined in the 2014 Mathematics Programmes of Study document i.e. that all students:

- *become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.*

- **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.

### Foundation Stage:

The pupils are working towards the Early Learning Goals within the specific area of mathematics. Practitioners enable all pupils to develop their mathematical understanding and problem solving through teacher directed and child initiated activities which encourage all pupils to enjoy, explore, practise, problem solve and talk confidently about mathematics.

### Equal Opportunities

Our equal opportunities policy is applied to mathematics. Teaching materials are chosen to reflect the cultural and ethnic diversity of our society. We try to avoid stereotyping through gender or race. Pupils' performance is monitored to ensure that no group of pupils is disadvantaged.

In lessons, the full participation of both girls and boys is encouraged and care is taken to ensure that the emphasis is on whole class teaching does not disadvantage any gender group.

### Inclusion

It is expected that the majority of students will learn at the same pace. Any child who needs additional support to access the learning will receive pre-teaching and intervention so that they can keep up with their peers. Occasionally, a student may need to be taught at a different pace. All teachers set curricular targets that are shared with the pupils. Children on the SEN register who have an Individual Education Plan may have specific mathematics targets. Similarly those children identified as being particularly able in mathematics are identified through tracking systems and are encouraged to work and apply their mathematical knowledge to greater depths.

### ICT

We use ICT in mathematics lessons where it will enhance and extend pupils learning, as in modelling ideas and methods. The children are taught how, and given the opportunity, to use and apply their learning in everyday situations using appropriate hardware and software.

### Cross-curricular links

Mathematics contributes to many subjects within the wider curriculum and wherever possible opportunities will be sought to draw mathematical experience out of a wide range of activities. This will enable children to begin to use and apply mathematics in real-life contexts and has been further developed by the implementation of our creative curriculum throughout the school.

### Assessment and reporting

Teaching staff evaluate each mathematics lesson and include formative assessments as part of their short term planning in line with the Assessment Policy.

Assessments are conducted at the end of each unit of work. These are used to inform future planning and are also used to make termly summative teacher assessments.

Records of progress include:

- Daily assessments or observations recorded on short term planning documents.
- 'Next steps' identified on short term planning documents and on Focus Maths Unit Review sheets.

- O Track records are updated each term in light of assessment information. These are used by class teachers and the SLT to identify those pupils underachieving or achieving beyond expectation.
- In EYFS children's mathematical knowledge and skills are baseline assessed on admission in September each year.
- In EYFS children are assessed against the development statements in the 'Development Matters in the Early Years Foundation Stage' document six times a year. These are analysed by class teachers and SLT and supportive/enrichment opportunities are planned for identified children.
- Summative assessments as in the Early Learning Goals at the end of the Foundation Stage and end of Key Stage Assessments.
- Assertive Mentoring sheets are used termly to share Maths assessments and targets with students and parents. Parents are also kept informed of their child's progress in mathematics through open evenings.
- Annual reports sent to parents in the summer term, copies of which are retained by the school.

## **Strategies for Raising Standards in mathematics including monitoring**

- The subject leader for mathematics formally monitors the teaching and learning of mathematics in line with the Monitoring Policy document.
- The subject leader monitors children's work in books and in displays throughout the year.
- Planning is monitored by Year group leaders on a termly basis and by the subject leader in line with the Monitoring Policy.
- All pupils are systematically tracked on the basis of termly assessments. The class teachers along with the SLT analyse these results each term to identify pupils who are underachieving or those who are achieving beyond expectation. Intervention or enrichment programmes are put into place as a result of the tracking evidence. O Track provides an established tracking system in KS 1 and 2.
- The mathematics subject leader carries out an analysis of the end of Key Stage Assessment results each year. The information is then used to contribute to the 'SATs' and Early Years Foundation Stage Profile Action Plan.
- Children's work is consistently marked in accordance with the Marking Policy and next steps in learning are identified with each child.
- The success criteria for each lesson are made explicit at the beginning to ensure all pupils are aware of how their learning will be assessed.

## **Homework**

Homework is used to support learning in mathematics. This could include

- KIRFs - Learning number facts
- Collecting data or taking measurements for a future lesson
- Counting and weighing activities
- Number games or puzzles
- A number problem to solve
- Mathematics tasks

### Key Stage 2

Mathematics tasks and tables work is set each week by each Year group.

## **Resources**

### **Key Stage 1 and EYFS**

- Most mathematics resources are kept in classrooms.
- Additional resources are kept in the cupboards in the corridor
- Training materials and teacher's guides are kept in the Subject Leader's office.

- Digital copies of the Maths Focus schemes of work and assessment materials are available to all staff through KLZ and Heads of Year have both hard and digital copies of these resources.

### **Key Stage 2**

- Most mathematics resources are kept in classrooms or year group shared areas.
- Additional / whole class sets of resources are kept in the corridor.
- Digital copies of the Maths Focus schemes of work and assessment materials are available to all staff through KLZ and Heads of Year have both hard and digital copies of these resources.

### **Health and Safety**

As with all other areas of the curriculum, attention is paid to pupil safety and safety points are noted in plans as appropriate.

### **Role of the subject leader for mathematics**

It is the subject leader's responsibility to:

- Be enthusiastic about mathematics and demonstrate good practice.
- Promote the 2014 Mathematics National Curriculum and EYFS expectations and ensure they are adopted throughout the school.
- Lead improvement in mathematics by providing inset for all staff.
- Keep up to date with initiatives in mathematics and feedback to all staff.
- Attend relevant courses and disseminate information to staff.
- Be available for consultation whenever possible
- Monitor the mathematics curriculum in line with the monitoring policy
- Review and update policy documents
- Review and update the annual subject action plan for mathematics.
- To further parental involvement and knowledge by facilitating support and advice through curriculum evenings and by disseminating appropriate information.

This policy will be reviewed regularly and updates given to Governors, in line with any new information and guidance that becomes available.

Reviewed by: Angela Carpenter October 2016

Date to be reviewed: September 2019