# Scraptoft Valley Primary School

# Policy for Mathematics

## Mission Statement:

Working together to give every child an excellent education in a caring environment.



Updated: April 2017 by S.Evans

# Introduction

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. (National Curriculum 2014)

**The aims of the 2014 National Curriculum are for our pupils to:**

- become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time
- develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately
- reason mathematically; follow a line of enquiry, conjecture relationships and generalisations
- develop an argument, justification and proof by using mathematical language
- problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance.

The EYFS Framework in relation to mathematics aims for our pupils to:

- develop and improve their skills in counting
- understand and use numbers
- calculate simple addition and subtraction problems
- and describe shapes, spaces, and measures

**The purpose of mathematics in our school is to develop and work alongside our school mission statement and vision. Therefore we aim to develop:**

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others
- confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation

We aim to provide a vibrant and exciting learning environment that uses appropriate resources to maximise teaching and learning in order to facilitate critical discussion.

**Breadth of study**

Careful planning and preparation ensures that throughout the school children engage in:

- practical activities and games using a variety of resources
- problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning

- open and closed tasks
- a range of methods of calculating e.g. mental, using concrete resources, using pictorial representations and more formal written methods.
- working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

**Teachers planning and organisation**

Long term 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.

Medium term planning:

Years 1-6 use the White Rose Maths Hub schemes of learning as their medium term planning documents. These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum.

Short term planning:

The above schemes of learning inform daily lesson/flipchart planning. Lessons are planned using a common planning format. EYFS planning is based on the medium term plans and delivered as appropriate to individual and small groups of children with thought to where the children are now and what steps they need to take next.

All classes have a daily mathematics lesson. In Key Stage 1 and Key Stage 2 lessons are 60 minutes with a daily 10/15-minute arithmetic focused session to secure these fundamental fluency skills. However, Year 1 pupils are introduced to full 60-minute lessons in a staggered approach throughout the Autumn term.

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. Mathematics is taught through an integrated approach.

## Special educational needs & disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's IEP's incorporate suitable objectives from the National Curriculum for Mathematics or development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis or through planned interventions outside the mathematics lesson.

Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the SENCO and/or the class teacher. Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities, where necessary, to support children with SEND but also activities that provide sufficient challenge for all children including high achievers.

## Equal Opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics.

## Lessons

In all lessons, learning objectives and success criteria are clearly displayed and discussed; these will be linked to the appropriate White Rose unit. The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics.

Lessons involve elements of:

- Investigation – giving children ample time and opportunity to explore problems and concepts;
- Instruction – giving information and structuring it well;

- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;
- Explaining and illustrating – giving accurate and well-paced explanations;
- Questioning and discussion;
- Consolidating;
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps;
- Application – providing all children with the opportunity to apply their skills through fluency, reasoning and problem solving.

**Pupils' Records of work**

Children are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient approaches. Children are encouraged to use mental strategies and their own jottings where appropriate and more formal written methods.

**Assessment**

Assessment is an integral part of teaching and learning and is a continuous process.

Teachers make assessments of children daily through:

- providing instant verbal feedback
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations
- marking in-line with the School's Marking Policy

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments.

Medium term

Termly assessments are carried out across the school using the assessment materials for each year group provided by the White Rose Maths Hub in line

with the schemes of learning. These materials used alongside judgements made from class work support teachers in making a steps assessment for each child which is in-line with the assessment policy using Primary Target Tracker.

Progress and attainment of pupils is discussed regularly and appropriate intervention considered and put in place where appropriate.

Long term

Year 2 and Year 6 complete the national tests (SATs) in May. Years 1, 3, 4 and 5 complete optional SATs papers produced by Testbase which inform teacher summative judgements in the summer term.

**Resources**

Each class has a stock of core resources that are age appropriate including counters and base-ten.

**Role of the Maths Subject Leader**

- To lead in the development of maths throughout the school.
- To monitor the planning, teaching and learning of mathematics throughout the school.
- To help raise standards in maths.
- To provide teachers with support in the teaching of mathematics.
- To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan.
- To monitor and maintain high quality resources.
- To keep up to date with new developments in the area of mathematics and teaching for mastery approaches.

# Appendices

Appendix A: White Rose Calculation Policy Guidance

Appendix B: White Rose Calculation Policy