



# **MATHEMATICS POLICY FOR ST. JOHN'S INFANT AND NURSERY SCHOOL**

## **Rationale:**

Children at St John's understand that mathematics can be found everywhere and in everything, and exploring and being creative with maths is essential to developing an enthusiasm and fascination for the subject.

Mathematics is a core subject within the National Curriculum and a key life skill that involves competence with numbers and measures. This policy outlines the purpose, nature and management of the mathematics taught and learned in our school. Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives.

## **Aims of our mathematics teaching:**

- To promote enjoyment and enthusiasm for mathematical learning through practical activity, exploration and discussion.
- To develop a progressive understanding of mathematical concepts, skills and attitudes.
- To understand the importance of mathematics in everyday life and its links with other areas of the curriculum.
- To develop the pupils' decision making and reasoning skills through practical tasks, problem solving and investigation.
- To give all children access to the mathematics curriculum and resources, regardless of ethnicity, gender, class or ability.
- To develop sound and efficient calculation skills
- To develop a thorough knowledge and understanding of numbers and the number system

## **Aims of this policy:**

- To ensure that the policy provides a shared understanding among teachers and adults working in the school of the principles and aims of our maths teaching.
- To provide a consistent approach to mathematics teaching throughout the school.
- To ensure that mathematics is taught effectively ensuring continuity and progression.
- To promote confidence and competence in maths teaching.

## **The Maths Curriculum:**

The school's policy for mathematics and calculation is based on the National Curriculum for mathematics and the Early Years and Foundation Stage Statutory Framework.

We aim to ensure that there is an emphasis on Maths skills which encourages appropriate connections to be made between all the aspects of the Maths curriculum. In the Foundation Stage the mathematics curriculum is based on and supported by the early learning goals for mathematical developments.



The National Curriculum (2014) for mathematics aims to ensure all pupils:

- Become **fluent** in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate written algorithms and mental methods, underpinned by mathematical concepts
- Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- Can **reason mathematically** by following a line of enquiry and develop and present a justification, including in unfamiliar mathematical language.

Foundation Stage Areas of Learning are:

- Numbers
- Shape, Space and Measures

National Curriculum Areas of Learning are:

- Number and Place Value
- Addition and Subtraction
- Multiplication and Division
- Fractions
- Measurement
- Properties of Shape
- Position and Direction
- Statistics

### **Organisation of Mathematics Teaching and Learning:**

In the **Foundation Stage** children are taught practically in order to promote social skills and the development of mathematical language and understanding.

- Concepts of shape, space, direction, size, length, capacity and mass are developed through sand, water and tactile play, outdoor provision, small world play, story-telling and songs.
- Children are also taught basics of number; 1 to 1 correspondence, number order and recognition. Role play situations provide opportunities for using and applying knowledge and problem solving.
- By the end of Reception the children write digits and calculations as well as recognise them and work with them practically to meet the expectations of the Early Years Goals as outlined in the EYFS.

In **KS1** children have daily Maths sessions following the National Curriculum.

- Year 1 continues a practical approach but steadily increases the recording aspect of mathematics.
- In Year 2 the children are given levels of challenge to choose from. These include 'Practise', 'Stretch' and 'Extend'. This enables a greater degree of independence and allows each child to make maximum progress. We also offer an Extra Hot Chilli Challenge which allows children to go deeper and broader. The children are able to enter at a level that is comfortable yet challenging for them. To promote more confidence with girls, the classes often focus on an all girl group.



## **Mathematics within the whole school curriculum:**

In KS1 Mathematics is delivered as a discreet subject but where possible some aspects will be taught as part of a cross curricular approach and relating to real life situations. All work is differentiated to ensure equal access to the full range of children's needs.

Learning is structured to ensure a balance of:

- Oral work and mental calculations
- Whole class work to rehearse, sharpen and develop number skills.
- The main teaching activity may include both teaching input and pupil activities and a balance between whole class, paired and individual work.
- Plenary/review to sort out misconceptions, identify progress and summarise key facts and ideas to remember, make links to other work or to discuss next steps. This may also be the opportunity to extend learning further and incorporate further challenge. It may or may not be at the end of the lesson.

Lessons will include rich opportunities for using and applying mathematics and the development of reasoning through speaking and listening.

In addition to the Maths lesson it is expected that all children will take part in daily mental maths sessions to develop their fluency, focusing on understanding of the number system, memorisation of learnt facts and rehearsal of basic number manipulation. These are planned for and encourage progression of basic skills.

## **The Role of Additional Adults in Maths Lessons:**

The role of the teaching assistant and/or other adult who is in the class to support a Maths lesson is outlined on the weekly planning sheet. They will:

- support targeted groups of children during whole class teaching
- lead small guided groups (to provide differentiation during whole class teaching or catch-up groups outside the Maths lesson)
- meet with the class teacher weekly to discuss planning
- make observations of identified children during whole class teaching and independent activities
- support groups during independent activities
- give written or oral feedback about the children's achievements

## **Planning:**

### *Long Term Planning*

The National Curriculum and the Early Years and Foundation Stage Document provide an overview of what is to be taught. This provides an overview of the key learning objectives for each year and the basis for medium term plans.

### *Medium Term Planning*

Medium term plans are set out by Maths Subject Leader and are in line with the calculations policy. The areas of learning are given as a guideline to work from, however class teachers are encouraged to select which specific objectives to cover and prioritise within a half term alongside



their parallel teacher. The medium term plans will be adjusted by the class teacher based on the children's needs and assessment data. These are monitored by the Maths Subject Leader who can help with planning.

### *Short Term Planning*

A unit of work is planned and prepared for using the school's planning grid. Some units may be planned for and taught over a week, however longer units may be carried out over a few weeks. These show details of the learning objectives and activities for teacher input and independent activity, groupings and deployment of adults, resources, key questions and vocabulary. Planning for the calculations strand of the maths curriculum is guided by the calculations policy.

Planning should be uploaded to School Network before week of learning taking place and adjustments to plans will be noted on paper copy and kept in School Planning File. Subject Leader will monitor planning files on a termly basis to ensure consistency and progression across the school and to ensure the maths policy is being adhered to.

Class teachers are responsible for providing differentiated work, which takes into account the individual needs of the child. This can be planned for in different ways e.g. by differentiating the task (different or stepped), differentiating by the expected outcome; planning for adult support or input.

### **Assessment:**

Assessment takes place at two levels: formative and summative. There is a continuous teaching cycle of planning, teaching and evaluation which informs assessment and planning.

- Formative assessment will be an informal part of every lesson. The class teacher will explain the objectives and success criteria for the lesson to help the children successfully achieve the objective. Next steps will be given to each group working with an adult to reflect on and encourage their progress within the session. The formative assessment will also involve the teacher checking the children's understanding at the end of the session to inform future planning. Children frequently use a range of strategies to self assess their work.
- Summative assessment takes place each term. Children have individual target mats in their books relating to National Curriculum objectives to work towards and they are aware of these targets. Children's progress is tracked to ensure they are making appropriate progress and discussed as pupil progress meetings. Year 2 children take the statutory end of KS1 assessments which are reported to parents.

In line with our marking policy, the child should be present whilst their work is marked with next steps to reflect on during guided group work. The most important 'marking' is informal diagnostic assessment during the lesson.

### **Monitoring and review:**

The monitoring of Mathematics is ongoing. Throughout the year the Maths Subject Leader looks at work samples, monitors planning and observes teaching and learning across the school.

Key questions considered as part of monitoring are:

- Is there evidence of plans being adapted for the class?
- Is it clear what the aims are for each week/lesson/unit of work ('by the end of this lesson (s) the children will be able to....')?
- Are there annotations that show these plans are live working documents?



The Maths Subject Leader will provide feedback and support as necessary and maintain a broad overview of standards of teaching and learning. The Maths Subject Leader is available to all staff in regard to advice and support. Also, meeting with a representative group of children on a termly basis to monitor and discuss impact of teaching on their learning.

### **Equal Opportunities:**

All children are entitled to access the daily Mathematics lesson at a level appropriate to their needs. Class teachers are responsible for providing differentiated work, which takes into account individual needs, builds on experiences, challenges thinking and enables learning to take place. Work should be presented clearly to children and expectations made explicit. Children with SEND should work in a variety of groupings and have access to a range of practical experiences and activities. Difficulties with literacy, i.e. pupils with EAL, should not dictate the level of Mathematics work provided for the children.

For children whose attainment significantly exceeds the expected level of attainment for Maths, teachers will provide a higher level of challenge that will extend and move that child on further in their learning.

Where a child's attainment is significantly below age related expectations, interventions and additional support is given. Within the classroom, choosing their own level of challenge provides all children with an opportunity to access the learning at their own level.

### **The Learning Environment and Resources:**

In-class Maths resources should be easily accessible and age-appropriate to support learning and independence. They should be clearly labelled and kept tidy, with any breakages or items missing reported to the subject leader for replacement. On some occasions teachers will provide certain resources for children to use, whereas on other occasions children will be encouraged to select the resources they will find appropriate to support their own learning.

Mathematics should be clearly evident within the classroom with the following on display:

- 1-50 number line in Nursery, 1-100 number line in Reception and upwards.
- 100 square in Reception upwards
- Key vocabulary
- A Maths display supporting calculation including examples of children's learning.

Some resources for more specific areas of the Maths curriculum are stored centrally e.g. balance scales, measuring equipment. Teachers are responsible for ensuring that these resources are returned after use. Resources are updated when necessary by the Maths Subject Leader in consultation with staff.

ICT will be used in a variety of ways to support teaching and motivate children's learning. ICT will involve using the Interactive Whiteboard, laptops, iPads and Beebots. We carefully select and choose appropriate websites, programmes and apps to enhance and support children's learning. These are regularly reviewed and updated. They will however only be used in teaching when it is the most appropriate and effective way of meeting the lesson objectives.



## **Homework and parental involvement:**

Positive parental involvement and encouragement is essential to a child's progress in Maths. In the Autumn term, the Maths Subject Leader will hold a Maths information session for the parents for Foundation Stage and for KS1. This encourages parents to be enthusiastic and have a positive attitude towards learning Mathematics. It also allows them to see how their children are being taught and they can ask questions about the methods being used. Parents can become familiar with the wide variety of resources that their children will be accessible to support their learning.

Parents are encouraged to discuss their child's progress and any concerns they may have at Parent Consultation Evenings as well as at any point throughout the year.

Maths homework begins in Reception. Each week work is sent home to reinforce the learning that has taken place that week. It also provides a valuable insight for parents into the teaching and learning that is taking place.

Policy written by Rebecca Colby, June 2015

Agreed by Governors:

To be updated by: