

St Bernadette's Catholic Primary School

# Mathematics Policy



"Doing our best for God"

This policy should be read in conjunction with the Calculations Policy.

**At St Bernadette's, all staff aim to create confident, independent pupils who are willing to explore, express, question and debate ideas in all areas of mathematics. We work to foster a curiosity and enjoyment of mathematics through meaningful and real-life situations by developing their number sense. Children are encouraged to make links across the curriculum and the wider world, reinforcing and extending their skills. They learn through enquiry and problem-solving activities, reflecting on their mistakes to enable them to reason and explain using mathematical vocabulary. Throughout their time at St Bernadette's, children are taught to learn the value of mathematics and aspire to be successful.**

### **AIMS**

At St Bernadette's we strive to offer a breadth of mathematical opportunities to children of all abilities in number, measurement, geometry, statistics, ratio, proportion and algebra. At St. Bernadette's we aim to:

- develop a positive attitude in children towards mathematics as a lifelong skill;
- enable children to become competent and confident mathematicians;
- promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- enable development in problem-solving skills, reasoning, logical working and systematic working **(Mastery in mathematics)**;
- enable application of skills and knowledge across the curriculum and in everyday life;
- communicate, explain and reason using mathematical vocabulary;
- use skills and understanding to enquire and experiment;
- develop the ability to work both independently, with a partner and within groups;
- work in partnership with parents to develop their child's mathematical skills.

### **PLANNING**

The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. 'Department for Education 2014'.

At St Bernadette's, all teaching staff have very high expectations in planning and delivering their mathematics lessons. Planning is a crucial part of teaching and ensures that children make excellent progress, taking into account pupil ability and those children with SEN Support Plans/EHC Plans.

Teaching staff responsible for teaching mathematics all follow the Lancashire Planning overview and the updated White Rose scheme of work that links to the National Curriculum 2014.

#### **Overview Document**

The planning starts with an overview document. This identifies six half-termly blocks of six weeks with focus areas of mathematics for each week. The units are designed to be cohesive and allow for application of learning and skills across the mathematics curriculum. The assessment and review weeks can be used to gain information for teacher assessments or can be used to pick up elements that need further support. It is not designed to be used as an entire week of testing with no teaching. This is a suggested layout and teachers should adapt to meet the needs of their class as required.

## **Planning Documents**

The half termly planning documents have been compiled to the following principles:

- Each half term predominantly focuses on learning about number.
- Almost all weeks are focused on one area of mathematics, giving children time to focus on a single area for a longer amount of time, allowing time for consolidation.
- The 'rationale' justifies why the objectives have been put together and how to enhance the teaching and learning during that week, e.g. number work is often given a context of statistics, measures, money or problem-solving.
- The objectives are the end of year expectations and it is the decision of teachers whether to visit the whole objective more than once throughout the year or to organise progression within each objective.
- Every objective is covered at least twice within the year.
- The learning within each week is not in a prescribed order and teachers should use their discretion when organising progression within the unit.

The 'Starter' suggestions begin with consolidation of the previous year's work and develop over time to consolidate learning within the given year group. It is important that children have the opportunity to regularly revisit learning from all aspects of the mathematics curriculum, and the 'Starter' is an effective time in which this can occur.

Teachers all have copies of the White Rose and the Lancashire yearly overview which is divided into six terms with six weeks in each term. Each of the weeks focuses on an aspect of mathematics.

It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. Planning will indicate where the teacher and teaching assistant are to be deployed, which activities are to be completed, questions to move children's learning on, potential misconceptions, teaching methods and resources. Activities during mathematics lessons may include practical tasks, mathematical games, problem-solving challenges and open and closed tasks. Children are given opportunities to develop a range of methods and ways of recording including mental mathematics, jottings, written calculations (as per Calculations Policy), written answers including reasoning and justification, and computer-based recording.

The class teacher keeps these individual plans. The class teacher and subject leader discuss them on an informal basis. Where possible teachers will plan cross-curricular activities to complement the subject being taught.

## **CALCULATIONS POLICY**

Every class displays the school's calculation policy which shows the agreed methods for every year group. For children to have a secure understanding and confidence in written methods, they must be taught systematically and consistently throughout the school.

## **SPECIAL EDUCATIONAL NEEDS**

As teachers, we are all aware that children learn at a different pace and that some children need extra support when learning mathematics. When children have a specific need, they will be given an SEN Support

Plan which highlights their learning difficulties. Some children may have an EHCP (Education Health and Care Plan) which will also identify the child's learning needs. Teachers take these into account when planning and differentiate appropriately according to their needs. Where appropriate, learning tools will be resourced or bought to support children's learning.

Planning includes provision for more able pupils who should be exposed to tasks and activities that explore and develop deep understanding, enabling children to make connections between concepts. Teachers challenge through greater depth - rather than accelerated content, (moving onto next year's concepts) and set tasks to deepen knowledge and improve reasoning skills within the objectives of their year group.

### **PUPILS' WORK AND MARKING**

All pupils use specific mathematics books to record their work. These will also be used to add other evidence such as photographs.

- KS1 - 2cm square exercise books
- Y3 - 1cm exercise books moving to 7mm square
- Y4/Y5/Y6 - 7mm square exercise books

All mathematics should be marked before the next lesson (in line with Marking Policy). Some children will need their work scaffolding and this should be modelled. Children should be given time at the beginning of their mathematics lesson to read the teacher comments and respond either through correcting work or receiving support from the teacher. Where a child has shown to be proficient in the lesson task / all work has been marked correct, then a challenge question will be set to consolidate learning and develop mastery.

### **ASSESSMENT**

In addition to the formative assessment undertaken in lessons, teachers will use termly summative assessments (during Assessment Week) supplied by the NFER to reinforce their judgements and provide further opportunities, through diagnostic analysis, to identify gaps in children's learning and tailor future lessons. Test results and teacher judgements are then recorded each term and teachers talk through the progress of their pupils at pupil progress meetings: this ensures targeted support can be given to those who need it.

### **SATs**

At the end of KS1 and KS2 children will take part in the statutory assessment of mathematics. Year Two tests will be teacher-assessed, whilst those at Year Six are externally marked.

Children who need support with reading are offered assistance both as standard classroom practice and during assessments to prevent that from becoming a barrier to learning or achieving in mathematics.

### **ROLE OF THE MATHEMATICS CO-ORDINATOR**

The mathematics co-ordinator is responsible for the monitoring and evaluation of curriculum progress. The role includes:

- scrutiny of books, planning and assessment files
- auditing and purchasing resources including published/online resources
- being familiar with current thinking concerning the teaching of mathematics, and to disseminate information to colleagues

- advising colleagues and helping to develop expertise through leading staff meetings/INSET
- writing and updating mathematics/calculations policy
- updating staff on new initiatives and curriculum
- reporting to head teacher/governors
- supporting colleagues one-to-one in development when needed
- meeting with mathematics governor to update on current policies, procedures and developments
- raising the profile of mathematics across the school through events and workshops

## **RESOURCES**

There are a range of resources to support the teaching of mathematics across the school. Staff are encouraged to use practical and visual models to support children's learning in mathematics. Within school, there are a wide range of appropriate practical apparatus. A range of software is available to support mathematics work. In KS2, there are a range of text books including Collins Busy Bee, Target your Maths and CGP. The school also subscribes to RM Easimaths, Times Tables Rockstars and Mathsframe. Teachers also have access to Headstart Primary Word Problems/Mastery books which are also adaptable. Resources are updated and added to each year with teachers identifying the resources their year group requires.

## **MASTERY**

Inspired by teaching approaches developed in Singapore and Shanghai, mastery is an inclusive way of teaching that is grounded in the belief that all pupils can achieve in mathematics. A concept is deemed mastered when learners can represent it in multiple ways, can communicate solutions using mathematical language and can independently apply the concept to new problems. Staff have access to a range of resources to support mastery including NCETM and White Rose Mathematics Hub.

## **TIMES TABLES**

Year 4 pupils will sit a compulsory online times tables test in June. The national curriculum specifies that pupils should be taught to recall the multiplication tables up to and including 12x12 by the end of Year 4. The times tables test is to determine whether pupils have a 'rapid recall,' which is essential for future success in mathematics as they will be applied to an increasing number of objectives as they move towards Year 6. Teachers will have the flexibility to administer the check to individual pupils, small groups or the whole class at the same time. As well as discrete teaching of multiplication tables, St. Bernadette's subscribes to Times Tables Rockstars which pupils are able to access at home as well as at school.

## **VOCABULARY AND READING**

A structured approach to the teaching and learning of vocabulary is essential if children are to move on and begin using the correct mathematical terminology as soon as possible. Mathematical vocabulary should be included in every lesson in order to develop children's knowledge and understanding. New words are introduced in a suitable context, for example, with relevant real objects, mathematical apparatus, pictures and/or diagrams. Teachers should explain their meanings carefully and rehearse them several times through discussion, questioning, written and verbal feedback. Every classroom should have helpful, appropriate, display materials, including mathematical vocabulary. There should be a clearly defined maths area/ working wall, with resources that can be easily read and accessed by the children.

## **EYFS**

Mathematics is taught through the Early Years Foundation Stage framework (EYFS) with pupils assessed throughout the year with mathematical activities. Progress is measured and recorded using Development Matters and Early Learning Goals (ELGs).

### **HOMEWORK**

Teachers provide homework at least once a week to reinforce what has been taught. It is seen as an opportunity for children to work with parents.

### **HOME SCHOOL LINKS**

Progress is discussed face-to-face at parent conferences and through the written format of reports at the end of the year. On each occasion, children are set targets and these are shared with parents and children. Their progress is discussed and parents encouraged to support their child where possible, particularly in the learning of times tables. Should parents feel they need to speak to the teacher to voice concerns or discuss progress, they are made aware that they are always welcome into school for discussion with the child's teacher. Parent workshops are organised to enable them to see and understand the calculation methods used in mathematics. This gives them greater confidence in supporting their children with their homework.

### **LINKS TO SECONDARY SCHOOL**

St Bernadette's has strong links with its feeder secondary schools. The school participates in various events led by local secondary schools, including times tables and mental mathematics competitions.

**Signed:** *J. Greenhalgh* (Mathematics Coordinator)

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