

*we pray we live we play we learn*

## **St. Winefride's Catholic Voluntary Academy**



# **Mathematics Policy**

Date: January 2016

To be reviewed: January 2017

Approved.

Date

# St. Winefride's Catholic Voluntary Academy

## MISSION STATEMENT

**We relate everything we do to our Mission Statement.**

**We pray, we live, we play, we learn**

### **Introduction**

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at St Winefride's Catholic Voluntary Academy.

The school's policy for mathematics is based on the 2014 National Curriculum. The policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all the teaching staff.

### **Aims**

The national curriculum for mathematics aims to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including the varied and regular practice of increasingly complex problems over time.
- **Reason mathematically** by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

We aim to place problem solving and investigative skills at the heart of our mathematics teaching. We recognise that collaboration and communication are crucial life skills and should be developed in our mathematics teaching. The expectation is that all children welcome challenge and that teachers foster the attitude that we all, even the most able among us, should expect to struggle. Through careful assessment, planning and preparation we aim to ensure that all children progress when they are ready. New knowledge and skills should be secured before new material is introduced. For those who grasp new material quickly, they should apply this to rich problem solving tasks.

### **Purpose**

A high-quality mathematics education 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 purpose of this policy is to ensure that all staff are able to implement the teaching of maths to a high standard in order for our pupils to achieve to the best of their abilities. It has been developed by the Mathematics Subject Leader to secure levels of attainment in maths of at least that of similar schools nationally.

Our objectives in the teaching of mathematics are:

- to promote enjoyment of learning through practical activity, exploration and discussion;

- to develop confidence and competence with numbers and the number system through rapid recall;
- to develop their conceptual understanding in order to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to help children understand the importance of mathematics in everyday life.

### **Context**

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It is a core subject with a range of cross-curricular links but most often, is best taught discretely, using opportunities from other subjects to rehearse skills in a context.

Numeracy involves developing confidence and competence in number work; shape, space and measure; handling data and the application of these skills. We aim to support children by equipping them with a range of computational skills and the ability to solve problems in a variety of contexts. This is effected by using the Age and Stage Bands for Early Year's Outcomes for Mathematics in Foundation Stage, and the Mathematics Programmes of Study to guide planning, teaching and assessment in Key Stages 1 and 2.

### **Teaching and Learning**

All teaching must be at least good and in many cases outstanding. Underpinning all good or outstanding teaching in mathematics is the expertise and sound subject knowledge of the staff. Clear policies and regular professional development from a range of sources will develop the expertise of staff to help:

- in delivering the school's curriculum thoroughly and consistently
  - in enhancing staff subject knowledge
  - in weaving mathematical ideas into a coherent whole
  - in choosing practical resources, visual images and information and communication technology that promote inclusive teaching and a deeper understanding for all
  - in using good Assessment for Learning techniques to listen flexibly to children and to check and probe their understanding throughout
- See also our Teaching and Learning policy.*

### **National Curriculum**

The school works to the expectations set out in the framework document for the national curriculum in England, July 2013 for Years 1 to 6 and the Early Years Foundation Stage Curriculum, 2012. Our curriculum for mathematics is tailored to meet the individual needs of each cohort and to fulfil our ambition for the children by the time they leave us. The school's curriculum places an emphasis on rich, applied mathematical tasks which allow the children many opportunities to persevere with problem solving. While some maths needs to be taught discretely, there is an emphasis on giving the maths a context so there is purpose for learning. Using the school environment and the wider world, the curriculum ensures children explore, make connections, seek patterns, recognise relationships and are creative with mathematics. A good understanding of place value and key number facts is extremely important therefore we encourage use of a wide range of practical equipment to support this conceptual development, as detailed in our Calculation Policy.

## **Implementation**

We carry out curriculum planning in mathematics in three phases (long-term, medium-term and short-term). Our mathematics curriculum is delivered using the new Early Years Learning goals and the new Mathematics Programmes of Study as a tool to ensure appropriate pace, progression and coverage of the subject. This coverage is reviewed continually by class teachers and planning is adjusted accordingly to ensure appropriate coverage of all mathematical strands.

Teachers plan for deep coverage and mastery of the school's curriculum through both daily maths lessons and additional opportunities to develop mental maths skills. Plans for daily maths lessons include teaching, practising, applying, and reviewing and cater for all learning styles (Visual, Aural and Kinaesthetic). Children's targets are at the forefront of all planning and are clearly linked to and reviewed through regular assessments. Lessons include opportunities for:

- practical activities and mathematical games
- problem solving
- individual, small group and whole class discussions
- open and closed tasks
- a range of methods of calculating e.g. mental, paper and pencil and calculator
- working with ICT
- outdoor learning

Plans should follow St Winefride's Calculation Policy which gives an overview of the development of addition, subtraction, multiplication and division from Reception to Year 6. Teachers should use this detailed information on progression through each strand and how to use practical resources and models to develop understanding at each stage. Classes are mixed ability and the groups within classes are fluid. Teachers will use a range of grouping methods when planning. No children miss out on the daily mathematics lesson for the class as it is crucial they have access to Quality First Teaching.

*See also our Calculation Policy and Homework Policy*

## **Resources**

All classes have access to the appropriate resources for their varying topics of learning in Maths. When additional resources are required, further items are ordered through the Maths subject leader.

## **Use of ICT**

Information and Communication Technology can enhance the teaching of mathematics significantly. It has ways of impacting on learning that are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. A range of software and hardware is available to support work across the school.

## **Staffing**

Teaching Assistants are actively involved in teaching small groups within lessons and in providing intervention sessions. They support all groups in the classroom, enabling the teacher to also work with all groups on a weekly basis. They offer sensitive support and are expected to modify tasks, materials and teaching resources as required. They demonstrate initiative in using practical resources to support learning and help pupils overcome difficulties, for example by using strings of counting beads to aid early multiplication. They are careful not to over-direct pupils' learning. They

spot misconceptions and gaps in learning, and take responsibility for assessing pupils in their groups, and help to identify the next steps and plan subsequent activities with the class teachers.

Children not in line to make expected progress are prioritised for additional intervention planned by the class teacher, as are those who are working below the level of expectation for their age. Class teachers are responsible for the content of these sessions although they may be delivered by a TA.

### **Entitlement**

At our school, we teach mathematics to all children, whatever their ability or individual need. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make good progress. Every child has an equal right to receive the maths curriculum in daily maths lessons of approximately one hour. There may be times when it is more appropriate for Foundation Stage or Key Stage 1 sessions to be approximately 45 minutes in length and for Key Stage 2 sessions to be over an hour.

### **Inclusion**

All children will have their specific needs met through differentiated work in conjunction with targets. TA support time is planned for and provided in relation to identified needs for individuals and groups.

### **Assessment, Targets and Recording**

All assessment is used to inform teaching and learning. We identify children's understanding and then swiftly focus interventions to overcome misconceptions. At St Winefride's we assess children in four main ways:

- Assessment for learning: continuous
- Marking: daily/weekly
- Termly/Half-Termly Assessing Pupil Progress (use of Rising Stars tests in KS2)
- End of Key Stage Assessments: annually

Children's progress is recorded on the target sheets in the front cover of their Maths books. These targets are updated at least fortnightly.

*See also our Marking in Mathematics policy and Assessment policy.*

### **Leadership and Management**

The role of the Senior Leadership Team is to empower colleagues to teach maths to a high standard and support staff in the following ways:

- By keeping up to date on current issues; disseminating relevant information and providing training for staff members (either directly or through other professionals)
- Leading by example / modelling lessons or styles of teaching
- Having a knowledge of the quality of mathematics provision across the school
- Identifying and acting on development needs of staff members
- Monitoring expectations, provision and attainment across the school and providing feedback to develop practice further in order to raise standards.
- Providing necessary equipment and maintaining it to a high standard.

### **Monitoring and Evaluation**

The quality of teaching and learning is monitored as part of the appraisal process through lesson observations and monitoring progress and attainment towards end of year targets.

Continuity and progression across the school is monitored by the senior leadership team as is the implementation and impact of Assessment for Learning.

A named member of the governing body is briefed to oversee the teaching and learning of mathematics. The maths governor meets with the subject leader to review progress.

**The policy will be monitored by the leadership team and governors and reviewed annually.**