

The Federation of All Saints & St Margaret's Catholic Voluntary Academies

Mathematics Policy

Introduction

'Mathematics is a creative and highly interconnected 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 mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.' (DfE 2013)

This policy outlines the organisation and management of mathematics teaching and learning at All Saints and St Margaret's Catholic Voluntary Academies. The policy is based on the 2014 National Curriculum for mathematics and the 'Development Matters in the EYFS' document 2012. The policy has been drawn up by the maths subject leader, shared and discussed with all staff 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 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

Teaching and Learning

Pupils are taught within their mixed age classes, with children studying material from the relevant year group. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

The curriculum will be delivered through daily maths lessons and also through other subject areas where appropriate.

Lessons should:

- provide opportunities to practice mental calculation and for children to orally explain their methods and strategies
- have clear focus; children should be aware of the lesson objective (s)
- be interactive and incorporate all learning styles
- include both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work
- be enjoyable and relevant
- pupils should be given opportunities to develop their skills, reasoning and problem-solving abilities

Pupils engage in:

- Problem solving
- Reasoning activities
- Practical work
- Investigational work
- Mathematical discussion
- The development of mental strategies
- Written methods
- Consolidation of basic skills and routines
- Appropriate calculator and computer work

Planning

Mathematics lessons are planned using the White Rose schemes of learning, adapted and amended as appropriate. Planning should demonstrate the opportunity for children to be introduced to new concepts, to practise these skills and then to apply and further consolidate and develop these through problem solving and reasoning activities.

All new concepts, in all year groups, will be introduced using the Concrete – Pictorial – Abstract model (CPA). All children, whatever their ability, will have access to resources such as Dienes blocks and place value counters to support their mathematical thinking.

Teachers should plan to include regular opportunities for children to reason and problem solve. Work will be sufficiently differentiated to enable all children to make effective progress.

EYFS

Mathematics within the EYFS is developed through purposeful, play based experiences in both the indoor and outdoor provision. The learning will focus on the expectations from Development Matters / Early Years Outcomes with a balance of child initiated and adult led activities. This area of learning includes counting, sorting, matching, seeking patterns, making connections, recognising relationships and working with numbers, space, shape and measures.

Mathematical understanding can be developed through stories, songs, games, sand and water, construction on a large and small scale, imaginative play, cooking activities and by

observing number pattern in the environment. As pupils progress, they will be encouraged to record their mathematical thinking in a more formal way.

Mental Maths and Number Facts

Learning number bonds and multiplication facts is an important part of any child's mathematical development. Children at All Saints and St Margaret's need to be able to recall number bonds and related subtraction facts as well as multiplication and associated division facts. The expectations for each year group are set out in the 2014 National Curriculum.

Mental maths skills and rapid recall of number facts will be taught in separate sessions outside of the daily maths lesson.

Assessment

At All Saints and St Margaret's we see assessment as an integral part of the teaching process. Formative assessment will be an informal part of every lesson to check understanding and to give the teacher information, which will help to adjust day to day lesson plans. After each lesson, teachers will identify any children who need additional support to achieve the lesson objective. These children will have the same day 1 to 1 intervention with a Teaching Assistant via 'Impact' sessions.

Self-Assessment - where possible, children should be involved in assessing their own work; this might include traffic lights, thumbs up etc.

Summative Assessment will take place five times a year through a combination of teacher assessment and use of the White Rose maths tests specific to each year group. This is entered on 'O Track' and progress of children will be tracked using the appropriate year group objectives. Additionally, the NFER mathematics assessments will be used three times per year.

Marking

Work is marked regularly in line with the schools marking policy. Teachers will mark children's work addressing misconceptions and giving next steps as appropriate. Pupils are given time to respond to marking.

Special Educational Needs

Children who require additional support are identified on both the year groups' provision maps and the teacher's maths plans. Needs for these children are met through differentiated activities and adult support when appropriate. This can take place both during the maths lesson and through an additional intervention, for example precision teaching. Where possible, all children will access the relevant year group lessons, with support. Dynamo Maths is available for children as an additional resource.

Very able children will need to be stretched through differentiated group work and extra challenges.

Leadership and Management

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the SLT, supported by the subject leader and governors. The subject leader will monitor standards of teaching and learning in maths through scrutinising planning and children's books, conducting pupil voice interviews and lesson observations as appropriate. Feedback will then be delivered to staff, including clear development points to move the subject forward.

Resources

Every classroom has a wide range of appropriate apparatus which is available for the children to select themselves. Additional equipment is stored in the mathematics resource cupboards in the kitchen area and the staffroom.

Teachers are encouraged to use materials from the nrich and NCETM sites, and in particular use the NCETM's "Teaching for Mastery. Questions, tasks and activities to support assessment" documents for the relevant year group.

To be reviewed June 2021

Appendix : Calculation Policy