St. Joseph's Murton

Mathematics Policy

Intent

At St Joseph's Catholic Primary School, we aim to teach children how to make sense of the world around them by developing their ability to calculate, reason and solve problems. We aim to support children in achieving economic well-being by equipping them with a range of computational skills and the ability to solve problems in a variety of contexts by delivering a curriculum that:

- promotes enjoyment of learning through practical activity, exploration and discussion;
- develops confidence and competence with numbers and the number system;
- develops the ability to solve problems through decision-making and reasoning in a range of contexts;
- develops a practical understanding of the ways in which information is gathered and presented; to explore features of shape and space, and developing measuring skills in a range of contexts;
- helps children understand the importance of mathematics in everyday life.
- becomes 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.
- to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

Implementation

Teachers are provided with Planning, Preparation and Assessment time (PPA) weekly in order to plan the specifics of their curriculum.

The National Curriculum 2014 provides the programmes of study to be covered and what the children need to achieve. Teachers use the framework provided by Durham LA to assist the medium term planning, highlighting the mathematics objectives to indicate in which term they will be covered. In addition, the school has a whole school progression map, which sets out the topics/concept to be covered by each year group. (see Appendix1)

At our school, we teach mathematics to all children, whatever their ability or individual need. Through our quality first mathematics teaching, we provide learning opportunities that enable all pupils to make good progress.

EYFS dedicate specific mathematics time each day where the whole class receive a teacher input and then different groups are led by teachers and TAs. Independent learning time in the afternoons allows children to experiment and explore mathematical learning in a variety of contexts.

From Year 1 onwards, all pupils have a daily dedicated mathematics lesson of approximately 60 minutes during the morning. Within the lesson there will be a good balance between whole-class work, group teaching and individual/paired work. Teachers will use their professional judgement to determine the activities, timing and organisation of each part of the lesson to suit its objectives.

We aim for children to master the key areas and domains in Mathematics, narrowing the gap between the most and least able learners. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged to deepen their understanding by being offered rich and sophisticated problems and not accelerate through to new content.

Mathematics is a symbolic, abstract language. To decode this language, symbols need to come alive and speak so clearly to children that it becomes as easy to understand as reading a story. We believe that all pupils, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking the concrete-pictorial-abstract approach.

Concrete – pupils should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – pupils should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract – with the foundations firmly laid, pupils should be able to move to an abstract approach using numbers and key concepts with confidence.

All classrooms have some concrete resources that can be used in the teaching of mathematics. Some more topic specific resources are located in the designated resource room.

During our daily lessons we encourage children to count aloud, practice fluency, problem solving and reasoning skills and ask mathematical questions. We develop their ability to independently select and use appropriate concrete apparatus to support their conceptual understanding and build procedural fluency. They have the opportunity to independently access and use a wide range of resources to support their work. We develop the children's ability to represent problems using visualisation skills, including jottings and pictorial representations. Children are also given the opportunity to revisit concepts daily through Morning Maths Sessions.

ICT is used in mathematics lessons for modelling ideas and methods. To support Year 4 children who are required to take a computer based times tables test at the end of the year, the school has purchased Times Tables Rock Stars. Children are encouraged to use this web based resource to practise their times tables at school and at home.

Wherever possible, we provide meaningful contexts and encourage the children to apply their learning to everyday situations. Although mathematics is best taught discretely, it has many cross-curricular links. Teachers need to use opportunities in other subjects to rehearse skills in a context. Mathematics involves developing confidence and competence in number work, geometry, measures and statistics and the using and applying of these skills.

The Early Years Foundation Stage Curriculum feeds into the National Curriculum. It is good practice to make use of cross curricular links to enable children to use their learning in a real-life context. Therefore, pupils should be given plenty of opportunities within sessions to use and apply the mathematical skills and concepts they have learned.

CPD

Teachers are offered CPD where needed and teachers who are new to year groups will be supported to understand the mastery approach to mathematics.

Special Educational Needs Disability (SEND) / Pupil Premium / Higher Attainers

All children will have Quality First Teaching. Any children with identified SEND or in receipt of pupil premium funding may have work additional to and different from their peers in order to access the curriculum dependent upon their needs. As well as this, our school offers a demanding and varied curriculum, providing children with a range of opportunities in order for them to reach their full potential and consistently achieve highly from their starting points.

Impact

Assessment for Learning is fundamental to raising standards and enabling children to reach their potential. Assessment in mathematics takes place daily using a range of strategies such as feedback and marking of work and verbal discussions with children.

Marking is both diagnostic and summative and the quality of teacher marking is crucial. Teachers follow the Marking Policy for the school, but where possible, teachers indicate errors together with an explanation of what went wrong. We believe this is best done through conversation with children but acknowledge that constraints of time do not always allow for this. Teachers endeavour to indicate clearly where the child went wrong, by underlining or circling calculation errors. It is important that marking is developmental where possible and teachers are encouraged to set challenges for children to develop their maths thinking. Time is given in the first ten minutes of each day for children to respond to teacher marking.

Assessment
Marking pupils' work, against the learning intentions is an integral part of every lesson and findings are noted on planning and reflected in subsequent planning. Feedback to pupils is timely, ensuring every opportunity is utilised to move learning forwards and ensure pupils make progress. Teachers use a combination of teacher assessment against the yearly maths objectives and formal testing (from years 2-6) to assess children's level of attainment and progress.

Progress is tracked each term for all children and the results are entered into assessment grids. This data is used by the Mathematics Subject Leader and Executive Headteacher to review children against Age Related Expectations based on their Key Stage starting points. Underachieving pupils are identified and given support as appropriate.

SATs testing takes place at the end of KS1 and KS2. These results are reported to parents.

There is also a statutory multiplication tables test at the end of year 4.

Self-Assessment
Where possible children should be involved in assessing their own work.
This might include:
Traffic Lights – How did they find the work? (Red/orange/green)
Red: 'I find this difficult'
Orange: 'I can do this but need more help to feel confident'
Green: 'I can understand and do this and this shows in my work'

Leadership and Management
The subject leader's role is to empower colleagues to teach mathematics 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 by modelling lessons or styles of teaching.
- Having a knowledge of the quality of mathematics provision across the school and using this to provide a coaching and mentoring role.
- 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.
- Procuring 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 through the progress and attainment documents. In addition, continuity and progression across the school is monitored by the mathematics subject leader as is the implementation and impact of Assessment for Learning. The Mathematics Action Plan will identify actions intended to raise standards.

The Mathematics Subject Leader provides a termly report to the governing body detailing the developments in their subject including pupil progress and attainment.

In addition, the Mathematics Subject Leader will also provide an annual summary report to the Headteacher in which s/he evaluates the strengths and weaknesses in mathematics and indicates areas for further improvement.

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

Sept 2023
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