



Policy for Mathematics in St Aloysius RC Primary School

Maths Philosophy

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate fluently, reason and solve problems. It enables children to understand relationships and patterns in both number and space in the world around them. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

Aims

The aims for teaching mathematics at St Aloysius Federated RC Primary School are:

- to promote enjoyment and curiosity of learning through practical activity, exploration, investigation and discussion;
- to develop an appreciation of the beauty and power of mathematics.
- to understand the importance of mathematics in everyday life.
- to develop children's ability to move between concrete, iconic and symbolic representations fluently and confidently.
- to promote confidence and competence with understanding and using numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts, and other curriculum areas;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to enable children to select and use a range of mathematical tools effectively.
- to equip children with the mathematical language needed to understand problems and explain their methods and reasoning.
- to promote and provide opportunities for children to develop the core learning skills of confidence, determination, curiosity, aspiration, teamwork, independence, communication and focus.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity organised into distinct domains, but pupils should make rich 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.

Teaching and learning style

The school understands that children learn in different ways, and so uses a variety of teaching styles in mathematics, adapting to the needs of the children as necessary and appropriate. During our daily lessons we encourage children to ask, as well as answer, 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, such as bead frames, bead strings, number lines, Dienes/ Base 10 apparatus, place value counters, Numicon, multilink, place value cards, Cuisenaire rods and other small apparatus to support their work. We develop the children's ability to represent problems using visualisation skills, jottings and pictorial representations such as Empty Number Lines and their own ideas. Mathematical dictionaries are used where appropriate. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we provide meaningful contexts and encourage the children to apply their learning to everyday situations. At all times the policy aims are the drivers behind the planning and delivery of lessons.

We aim for children to achieve mastery of the key areas and domains in Maths, 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 through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including through additional practice, before moving on. We achieve this through a range of strategies, such as the use of differentiated work, booster programmes (such as Success@Arithmetic and Springboard Maths) and SEN intervention programmes (such as Numicon - Closing the Gap). There is also the use of peer-support pairs and guided or targeted input from the teacher and teaching assistant.

Children in Years 2 to 6 will be taught in sets. These 'set' classes have been formed using judgements from data and also knowledge of children's strengths/weakness in mathematics. We have a flexible approach to groupings, continually informed by effective Assessment for Learning practices. We use classroom assistants to support the children, both as part of this differentiation and when a particular group of children is being targeted.

Maths Timetable

The new National Curriculum places a great emphasis on mental recall. At St Aloysius, we have adapted the daily timetable to incorporate extra Mental Maths sessions to the daily Maths lesson:

EYFS – Nursery have a maths focus day during each two and a half day session

EYFS – Reception do maths sessions in the afternoon until October half term and then the session moves to a morning session.

KS1 – 1 x 50 minute maths lesson and a 10 minute mental maths session.

KS2 – 1 x hourly maths lesson and a 10 minute mental maths session.

Mathematics curriculum planning

Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study: Key stages 1 and 2 as the basis for our school curriculum, ensuring we teach the relevant statutory content. This is backed up with non-statutory guidance from the National Curriculum and other useful resources such as:

- The White Rose Maths Hub;
- Hamilton Trust planning and resources;
- The Lancashire Grid for Learning planning; and
- NCETM website resource.

The school's Calculation Policy details the approach and learning progression in the main operations of addition, subtraction, multiplication and division, and is a working document that all staff are expected to apply.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The long-term plans are the National Curriculum Objectives to be covered in each year group.

Our medium-term mathematics plans give details of the main teaching objectives for each domain and provide the structure of the 'mastery' approach to our curriculum design and organisation. Maths is taught in topic blocks that are built upon to develop secure, fluent understanding of each domain. An emphasis is placed on place value at the beginning of the Autumn Term.

The short-term plans contain the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught. The class teacher keeps these individual plans as well as uploading them onto the Google Docs. The subject leader and class teacher will discuss them on an informal basis as part of the subject leader's monitoring, as well as when more formal monitoring takes place.

Early Years Foundation Stage

We teach mathematics in our Foundation Stage where we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children during the Early Years Foundation Stage. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics. Maths is incorporated into both the indoor and outdoor environments throughout Early Years so that the use of mathematical language and exploration of concepts are nurtured and embedded in all activities and at every opportunity to reflect the daily importance Maths has in everyday life.

Links with other curriculum areas

Our school runs a flexible, creative theme-based curriculum, and although much of the Mathematics is taught during a daily maths lesson, we constantly seek to make meaningful cross-curricular links through our themes in order to embed maths into the bigger picture of each child's learning, and to provide real life relevance to the concepts and skills that they are acquiring. This is a two-way process, so sometimes the maths objectives may be taught as part of another topic, and other times the other curricular objectives may be taught as part of the maths. Opportunities to do this may be identified at either the long-term, medium-term or short-term planning stage.

Marking of Work

The marking of the children's work must be kept in line with the school's 'Feedback and Marking' Policy. The purpose of marking in maths is primarily diagnostic. It communicates to

a child whether they have successful, being motivational, and serves to inform a teacher's planning in terms of any misconceptions.

Written comments must be focused on moving learning forwards and encourage risk taking, perseverance and the often open-ended nature of maths.

Incorrect answers will be identified clearly. Children should not be allowed to alter any answer once it has been marked. Responding to marking and corrections should be carried out at the start of the next lesson (or within the lesson) using a Green Pen. The process of correcting work is encouraged to establish the importance of self-checking work by the child and to avoid making similar errors in the future.

It may be appropriate to tackle misconceptions and challenge progress during lessons, and promote children's independence and use of support strategies.

Maths Learning Environment

We aim to create a rich and stimulating Maths environment that promotes learning and independence through Maths Working Walls in each classroom. Maths Working Walls and resource areas in the classroom will:

- Support the children with their Maths.
- Contain information relevant to current teaching (key vocabulary, models/images, success criteria, targets).
- Include Maths resources clearly labelled and accessible for the children.
- Be clear/large enough for children to read.
- Be changed regularly so it doesn't become just 'wallpaper'.

Home/school links

We aim to raise the profile and understanding of our approach to Maths with parents, and they are encouraged to be actively involved in supporting children's learning in school. The school website includes a breakdown of the maths curriculum for each year group along with the booklet, 'Helping your child with maths' that informs parents of the strategies used in St Aloysius and suggestions to parents as to how they can support their children. Additionally, pupils in years 3-6 complete 'maths notebooks' which record new mathematical concepts and act as a refresher to pupils and guide to parents. Additionally, Maths Cafes are held for all year groups early in the Autumn term and then parents are invited into maths lessons to observe how we teach the basic skills.

Homework will be sent home on a weekly basis in order to reinforce concepts and skills being learned in school.

Assessment

Assessment for learning

Assessment for learning is embedded into each lesson and teachers use assessment for learning techniques and strategies on a daily basis in order to identify pupils' strengths and difficulties, inform the next steps for each child's learning and improve the learning outcomes for each child. Short-term planning is constantly reviewed and modified on the basis of these assessments.

Summative assessment

We make half-termly summative judgements of each child's achievement using the school's Assessment without Levels system, in line with the Government Guidance and demands of the National Curriculum.

Some of the evidence base for these assessments may come from day-to-day class work, but there is an emphasis on evidence that comes from specific tasks and tests used to assess the degree of retention, independence and breadth of application shown. We use these judgements to assess progress and achievement against individual, school and national targets. We identify and target those children not making expected progress and intervene accordingly.

Assessment is tracked on an ongoing basis and reported half termly using the school's Assessment without Levels tracking system and pupils' progress recorded. Children who haven't made expected progress become a focus in teacher's planning. We pass all assessment and tracking information on to the next teacher at the end of the year, so that they can plan for the new school year.

There will be National Curriculum tests for Year 2 and Year 6 in the Summer term, in line with Government guidance.

We give parents the opportunity to discuss their child's progress and attainment each term in a teacher/parent meeting. We also write a summary of each child's progress and achievement in the Annual Report for parents.

The role of the Subject Leader

The Head teacher will:

- Provide support by encouraging staff and praising good practice.
- Monitor learning and teaching through lesson observations.
- Monitor planning and reviews.
- Give feedback to teachers following lesson observations.
- Support staff development through in service training and provision of resources.

The Mathematics Leader will:

- Provide a strategic lead and direction for Mathematics in the school;
- Provide support and advice to staff in the delivery of the Mathematics programme of study;
- Remain informed about current developments in the subject by attending INSET sessions and being involved in independent research and reading;
- Disseminate relevant information to staff;
- Deliver INSET sessions to staff, to support staff development;
- Monitor and evaluate teaching and learning of Maths;
- Monitor standards in the subject, through planning and work scrutiny, statistics, quality of teaching and pupil assessments;
- Order and maintain resources to enhance effectiveness of Maths teaching within the school;
- Consider with staff and work with SMT members in the evaluation and planning of actions included within the School Development Plan.

The Class teacher will:

- Be responsible for the teaching of Maths as set out in the policy.
- Provide planning and reviews for the Head Teacher and Maths leader to have access to.
- Provide samples of maths work to the Maths leader when required.
- Assess children's work in order to detail future planning.

Special needs provision, including gifted and talented

At our school we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of disadvantaged and vulnerable children, including those pupils who generate Pupil Premium, those with special educational needs, those with disabilities, and those learning English as an additional language. We take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors such as classroom organisation, teaching materials, teaching style, and differentiation so that we can take some additional or different action to enable the child to learn more effectively. Ongoing assessment for learning and summative assessment allows us to consider each child's attainment and progress against expectations. This ensures that our teaching is matched to the child's needs.

Intervention will take place through SEN support for children with special educational needs. Action plans identify barriers to learning and may include, as appropriate, specific targets, strategies and intervention programmes relating to mathematics, such as the Wave 3 Maths Intervention, Numicon and 'Bridging the gap' strategies.

We also ensure that we meet the needs of those children with special gifts and talents. This may be achieved in a variety of ways, such as individual learning programmes and collaboration with other year groups and schools (including feeder Secondary Schools).

Mrs Dionne Dunn

Mathematics Subject Leader

Summer term 2017

The policy is to be reviewed during: Summer term 2019