St. Mary of the Angels Catholic Primary School
Maths Policy

School Mission

"Recognising and celebrating the presence of Christ in one another"

At St Mary of the Angels:

we aim to follow Jesus through the teaching of the Gospels and inspire each other to be Christ-like;

we all work as a big team to encourage everyone to be the best that they can be, at work and at play;

we create a safe, positive, fair environment where all feel respected and valued.

Statement

The purpose of this policy is to describe our practice in Mathematics and the principles upon which this is based.

Here at St Mary's we recognise and embrace the enthusiastic enquiring minds of our children. We know that practical application and time for talk are the way to achieve optimum results, For those reasons, we have worked hard to ensure that our style of Maths teaching embodies the learning styles we have observed, over years, that work best for the children here in Aldridge.

We recognise that Mathematics is a creative and highly inter-connected discipline, which is essential to everyday life, critical to science, technology and engineering, and necessary in most forms of employment. A high-quality mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject.

Being "good at Maths" requires confidence and competence with number and measures. It assumes an understanding of the number system, a repertoire of computational skills and an ability to solve number problems in a variety of ways, when information is gathered practically, presented in words, in graphs, diagrams, charts and tables.

When presented systematically and in a timely way, Maths lets children come to terms with their environment through: permission to question; opportunities to investigate and then chance to evaluate, collaboratively. We feel that our children learn best when this approach is used.

Finally, we aim to develop a love of maths as a subject in its own right - just as we do in Reading and in Writing. We know that not all of our children are budding mathematicians of the future, but some are. For those who are, we provide a challenging platform to start them on their journey and a passion for the subject, which may form part of, or all of their careers in the future.

Intent:

Through adherence to the National Curriculum (2014) and the Early Years Foundation Stage Framework (2021), we aim to:

- develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to solve problems.
- maximise and build on children's fluency in the fundamentals of mathematics

- provide varied and frequent practice with increasingly complex problems , so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- practise and refine pupils' ability to can reason mathematically and systematically, using mathematical language, appropriate to their age and stage of development
- encourage strategies to solving problems by applying their mathematical knowledge in familiar and unfamiliar situations, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Use 21st century technology to inspire and hook children to want to learn more
- Engage parents as first educators, through timely and appropriate homework opportunities, to know what they are good at and to know where they need to improve, from their starting points

Implementation:

Pupils will:

- be taught well and be given the opportunity to learn in ways that maximise their chances of success
- receive daily opportunities to embed and consolidate their learning, through a combination of self improvement, talk for maths and adult intervention
- develop a journey throughout each week, combining skills taught and refined with opportunities to problem solve and reason, using these skills
- receive good adult support, where needed, to tackle specific barriers they face, to progress - ranging from mathematical competency to self belief and resilience-.
- be encouraged to develop their own confidence, understanding and enjoyment in mathematics;
- be given a growing awareness of relationship and pattern, and how these can bring about a clearer understanding of a mathematical situation;
- see maths as a means of communication through which they can analyse information and ideas;
- become skilled, over time in working systematically where tasks requires a careful accurate approach
- be encouraged to apply their own imagination, initiative and flexibility when appropriate to reason and solve problems;
- be challenged to develop independence of thought and action as well as the ability to cooperate within a group;
- refine and practise problem solving skills and strategies;
- be guided to use mathematics effectively as a tool in a wide variety of situations;
- develop progressive competency, fluency and accuracy in factual recall, mental and written arithmetic methods (in line with our Calculation Policy)
- Use a wide variety of resources, with increasing independence to support their mathematical learning and problem solving

Subject Organisation

Foundation Stage

The programme of study for the Foundation stage is set out in the EYFS Framework 2021. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures. There is now a much stronger focus on the importance of embedding a deep understanding of number to 10, including the patterns and relationships between these numbers and developing spatial reasoning skill. Daily mini maths sessions support and consolidate a love of learning in our littlest learners

Key Stage 1 and 2

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils are encouraged and directed to make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at

this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2 The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.

In arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with

fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

Cross curricular

Our Maths is taught as discreet lessons, however the natural overlap between problem solving in Science, in Geography and in Art and Design is recognised and developed where appropriate. Natural links between measure, statistics, in art, music and in design is encouraged where appropriate, extending and further promoting Mathematics here at St Mary's. Our prime focus however, remains the desire to inject an approach to problem solving which will equip our pupils for their 21st century world, and sow the seeds of leaders of the future in all aspects of mathematical excellence, including economics, statistics, pure maths, applied mathematics and the education of others in maths.

Teaching and Learning

The approach to the teaching of mathematics within the school is based on:-

- A mathematics lesson every day
- A clear focus on ensuring that the following elements form part of the teaching of Maths across a planned sequence of learning:

· Skills and concepts taught, revisited and practised
· Application of these skills/concepts introduced and modelled
· Opportunities to problem solve using these skills is facilitated through chance to talk, reason, trial, test, hypothesise and explain, in the safety of their peers/class
· Challenge to embed their knowledge in unseen situations and test their learning
· Areas of their learning which are unclear or not embedded are met again and refined as nee ded

The curriculum is delivered by class teachers, with the support of other adults as directed by Senior leaders, based on the needs of the cohort.

Work is differentiated in order to give appropriate levels of support and/or challenge to children

Impact

Our planning is based on what we already know about the children and on what we should be delivering to children across each year. Largely speaking, we aim to focus in depth on the skills of number across Y1-Y6 in the Autumn term This then allows time to refine theses sills through problem solving activities as we progress through the year and into the Spring Summer terms.

Each phase work together to introduce new skills and concepts initially, and then to develop refine and embed these through Quality First teaching and updated, lively 21 st century resources. These include White Rose, Some elements of Big Maths, and Little big maths, particularly the active multi sensory approach lower down the school, and the methods of calculation (See Calculation Policy)and much Talk for Maths, which our children thrive on.

Planning is shared, adapted and amended based upon the National Curriculum (2014) and relevant Programmes of Study. Class teachers are responsible for the relevant provision of their own classes and individually develop weekly plans which give details of key learning and appropriate differentiated activities.

Although planned in advance, they are adjusted on a daily basis to better suit the arising needs of a class and individual pupils. They are considered to be live working documents which support staff to facilitate learning.

Inclusion and equal opportunities

All children are provided with equal access to the mathematics curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

At SMA, 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 in daily maths lessons.

Special Educational Needs

All children will have their specific needs met through differentiated work in conjunction with targets identified on their Pupil Profile and/or EHCP. Additional support from identified adults is deployed where necessary to enable access to maths learning for individuals and groups with specific needs.

Assessment recording and reporting

Afl is integral to all of our Maths teaching sequences, with children using our feedback policy and supporting each other through peer learning, gaining independence through self editing and building upon advice offered through teacher/adult intervention and feedback. This has become effectively embedded in recent years and our pupil voice tells us that children like the approaches to learning we use.

Children who are significantly behind in terms of attainment and/or progress will receive additional support through resources, differentiated activities, scaffolding or adult support. Staff assessment and knowledge of children's next steps is integral to this process.

Summative assessments , with good provision for specific learners in the form or readers, scribes, prompters and additional time, are termly events using NTS assessments and supplemented by other relevant resources which support staff to know children's next steps and share these with all relevant stakeholder. Data from these tests informs planning effectively.

Feedback and presentation

Teachers are expected to adhere to the schools feedback policy Highlighters are used to mark the objective (green and pink). Yellow and orange highlighters are used by children to support through peer marking or to self edit.

Finally, Purple pen of power can be used to edit and correct, also. Much marking and feedback is collaborative as our pupils prefer this method and have evidenced that it improves their learning

Monitoring and Evaluation

The Curriculum leaders, alongside SLT, are responsible for monitoring and evaluating curriculum progress. This is carried out through book scrutiny lesson observations, pupil voice, staff discussions, audit of resources and staff discussion and analysis, during staff meeting time, as identified by the Maths Curriculum Team.

Teachers will use the previous year's summer assessment material as a baseline each Autumn Term to identify any 'gaps' or 'rusty' areas of knowledge. They will then develop a systematic approach to delivering the National Curriculum, which best suits the learning styles of their class and the teaching styles of the adults in the setting. Each term NTS assessments in Y1-Y6 will take place and tracking sheets will be shared at progress meetings which identify the next steps for groups of learners, in preparation for next term's teaching sequences. These have been adapted and amended to suit the needs of children after Lockdown 2020, particularly, and staff know the importance of plugging gaps in Maths, before moving forward.

- The six areas of priority include:
- Number and Place Value
- Number facts
- Addition and Subtraction
- Multiplication and Division
- Fractions (including decimals and percentages)
- Geometry

Professional Development

Training needs are identified as a result of whole school monitoring and evaluation, performance management and the needs of children. These will be reflected in the Maths Action Plan and implicit in the School Development Plan.

Opportunities to monitor and engage in professional dialogues as a teaching staff, and often including support staff, supported by chances to see quality teaching where staff are in need of support, are integral to the practices in place at SMA.

The policy will be reviewed in March 2024.