

Maths Policy 2021

'With Jesus we can achieve what we dream and believe' School Mission

Overview

This policy (in conjunction with the Teaching and Learning policy) contributes to the school's philosophy of teaching and learning as expressed through our mission statement.

The new National Curriculum states that: "Mathematics is a creative and highly inter-connected 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 mathematics education therefore 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."

Intent

The maths curriculum here at St Michael's is underpinned by this National Curriculum. It values the development of independent numerate children who value maths as a skill for life. It prepares them for their role in the wider world.

By the time our children reach the end of year six we endeavour for them to be able to draw upon a range of numeracy skills & knowledge which they can independently adapt to an ever changing context. Their reasoning skills will enable them to meet the needs of a changing world.

Year on year children will build on set skills & knowledge this will be underpinned by an ever increasing range of broad vocabulary and skills. The experiences that they gain here will be transferable for a range of contexts enabling them to both contribute and make the most of today & tomorrow's society!

Our core principles:

- A daily lesson designed to underpin and develop Number fluency, reasoning & problem solving.
- Daily lessons will be supported by quick rapid fire 10-15 minutes basic skills sessions. Basic skills sessions should take place twice a week.
- Everything we do should reflect **A CPA approach: Concrete** (hands on manipulating equipment) **Pictorial** (representing resources and equipment through diagrams and aids) **Abstract** –Where children are number fluent.
- Our CPA approach therefore requires well resourced and age appropriate resources in each classroom and learning base. Regular resources used to support mathematics include base 10, numicon & cuisinnaire rods.

This can be expressed in the following Aims & Objectives:

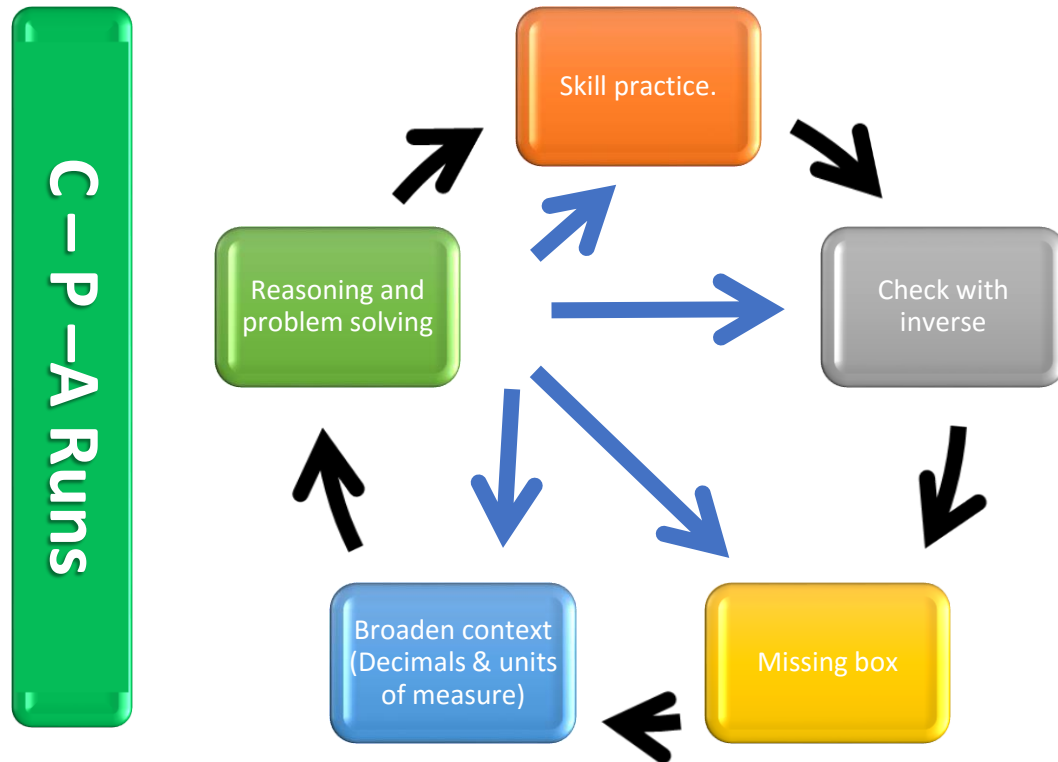
Using the Programmes of Study from the National Curriculum the aims of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- To create a lively, exciting and stimulating environment in which all children can learn Maths
- Ensure the delivery of Maths is filled with cross curricular opportunities
- To promote confidence and competence with numbers and the number system and to use mathematical vocabulary to reason and explain.
- To develop the ability 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 explore features of shape and space and develop measuring skills in a range of contexts
- For children to challenge and stretch themselves and take risks in their learning
- To promote the concept that acquiring mathematical knowledge and skills provides the foundation for understanding Maths in everyday life.

Framework.

The National Curriculum Program of study is taught in organised blocks using the White Rose Revised Planning. These units also link and build upon the framework or units outlined in the Ready To Progress Criteria. (2020) This ensures previous knowledge is built upon in a systematic way. Specific class based teaching uses a variety of resources rather than one particular scheme. This allows the teacher and adults working with the children to tailor and select resources which match their prior knowledge.

Each unit or block of work will include aspects from the following model. There is no set starting point, some topics may be best building upon solid skills, where as at other times it is more beneficial to introduce reasoning.



Assertive Mentoring

Assertive mentoring (AM) provides an opportunity **twice a week** to expose the children in Ks2 to the whole curriculum. This is done through the skills check programme. This will include aspects the children have previously covered, aspects currently being taught, plus early exposure to topics yet to be covered.

Through trialling and adapting for our school over two years this has proven to provide pupils and staff with the following advantages:

- Allows teachers to pinpoint teaching & adjust planning.
- Builds resilience for pupils "A have a go attitude"
- Allows topics not to be seen or taught in isolation.
- Allows teachers to check and revisit topics if necessary - while clearly planning for future teaching.

Covid Recovery *

The mathematics taught in St Michael's acknowledges the significant gaps in learning accumulated through periods of school closure & remote learning.

Following the return of all children in March 2021 Additional 15 minute mathematics sessions have been incorporated into the timetable. These sessions are teacher led during the afternoon session. The purpose of these sessions is to ensure full coverage of the curriculum

and to address gaps in prior learning. The sessions are based on the 2020 RTP document. Each class uses 1 week to address a key strand/RTP expectation. This is done through our whole school maths approach with an emphasis recovery and consolidation for all. This programme will be reviewed throughout the Summer Term of 2021.

Strategies

It is important that children are allowed to explore Maths and present their findings not only in a written form but also visually; to that end the school will adopt the CPA approach: concrete, pictorial, abstract. This will allow the children to experience the physical aspects of Maths before finding a way to present their findings and understandings in a visual form before relying on the abstract numbers.

At St. Michael's we follow the White Rose Calculation Policy (See Appendix 1) We also use White Rose Maths plans as an aid to our planning.

Nursery: Maths is taught through all areas of play and also as a small guided group session.

Reception: At the start of the year Maths is taught as a whole class daily lesson and guided maths sessions take place each day. By the end of the year Maths will progress to being taught as a whole class 45minute lesson. Maths games are played weekly across the phase and there are mathematical opportunities offered daily throughout the learning environment, both inside and outdoor.

Year 1-6: There is an hourly maths lesson, which includes basic skills revision and also 5 x 10 minute basic skills sessions per week. (See Maths Yearly Overview) We place a strong emphasis on the teaching of basic Maths skills, knowledge and understanding (times tables, calculation methods etc.). To help with this, we have set aside the left hand side of Maths books for record of basic skills and calculation strategies. Each class dedicates 10 minutes per day on the teaching of basic skills. We follow the Assertive Mentoring Strategy for the recording and assessment of Basic Skills. 30 minutes of a Monday is set aside for a skills check and 45 minutes on a Friday are dedicated to addressing misconceptions. Display and Resources In the classrooms there should be, either on display or easily accessible to children, appropriate resources, particularly concrete and pictorial apparatus to support children to grasp concepts.

Mathematical vocabulary should be displayed so that children use this in the communication of their understanding. There should be maths work on display in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children.

Mathematical materials, equipment and Basic resources are stored in each classroom. The mathematic Co-coordinator should be informed when equipment needs replacing or supplementing.

The children are shown how to take care of equipment and resources and progressively encouraged to select materials suitable for the task in which they are engaged.

Links to other curriculum areas

Mathematics contributes to the children's spiritual development, finding shapes and pattern in nature, seeing order, logic and pattern that number offer. Opportunities to reinforce

mathematical concepts in other subject areas as well as in the outside environment will be encouraged and provide.

The role of the subject leader:

The role of the subject leader is to:

to provide a strategic lead and direction for the subject

- to support and offer advice to colleagues on issues related to the subject;
- to monitor pupil progress in that subject area;
- to provide efficient resource management for the subject

It is the role of the Maths subject leader to keep up to date with developments in Maths , at both national and local level. They review the way the subject is taught in the school and plan for improvement. This development planning links to whole-school objectives. Each subject leader. The maths subject leader is supported by a maths team drawn from teachers across the key stages.

Monitoring and Assessment:

Teachers will work collaboratively within year groups to ensure coverage and clear progression. Within each year group they will work to plan and deliver lessons that suit the particular learning styles of the children within the year group. The White Rose planning framework and accompanying resources are used as a spine Teachers continuously assess the children informally (formative assessment) through their marking and interactions with the pupils during lessons.

On a daily basis pupils receive both verbal and traffic light feedback “live marking” within the lesson. This shows when they are ready to progress to the next aspect of their learning. At the end of each unit of work or “Spine” children complete the end of unit assessment. This provides the teacher with key information that can be addressed within subsequent lessons.

Across a range of lessons children should be allowed to engage in mathematical discussion (talk partner or group work), investigations, problem solving, practical experiences and written methods, as well as allowing for time to demonstrate their understanding through gap tasks. In EYFS children’s attainment and progress is tracked on a daily and weekly basis.

NFER Testing: As part of our formative assessment year’s 3, 4 & 5 conduct NFER test in the autumn term, as a baseline assessment, and then again in the summer term to identify progress and inform attainment standards.

Parental Support and Homework

We recognise that parents make a significant difference to the pupils’ progress in maths and encourage this essential partnership. Homework follows the school’s Homework Policy and is used for the following purposes:

To practice a skill

To learn something by rote such as times tables and formulae

To revise for an assessment

To explore a mathematical problem or question

To research a topic

Currently the school subscribes to Times Tables Rock Stars & Numbots online resources. Children are provided with a username and password which can be accessed at home. From Y3 onwards weekly access at home to the resources is actively promoted as part of our homework policy. Children who do not have access to online learning are given further opportunities in school and supported with paper based resources.

Outcomes Intended Outcomes Our pupils will learn to:

Develop the appropriate mathematical language associated with number, shape and position;

Use and apply mathematics in practical tasks, in real life problems and in acquiring further knowledge, skills and understanding in the subject itself

Understand and use the four operations of number in relevant contexts

Understand relationships between numbers, learn basic number facts and develop a range of computational methods

Understand place value in our counting system and understand how it can be extended into numbers below zero.

Use their mathematical skills in simple problem solving;

Collect, interpret and represent data in tabular, graphical and diagrammatic form;

Develop mental methods of calculation;

Recognise, describe and represent shapes and patterns in terms of their properties, location and movement;

Measure quantities including length, area, volume/capacity, angle, temperature, time and mass

By the time children reach Year 6 they will be introduced to ratio/ proportion and language of algebra as a means for solving a variety of problems.

Pupil to be at the Age Related Expectations (ARE) at the end of their appropriate school year.

Monitoring of standards across the school

In conjunction with the teaching and learning team, the maths lead will ensure that the standard of teaching and learning is consistently good across the school. This will be done using the following strategies:

- Robust and tailored CPD including staff meetings & external courses.
- Book sampling & monitoring.
- Lesson Drop in's and observations.
- As part of the wider school mentoring and coaching programme.
- Monitoring of Active & relevant to learning working walls.

Appendix Appendix 1: Calculation Policy (white rose adapted)

Maths Lead: Matt Nice

Date Approved by Governing Body: 16/03/2021

Chair Governors: Jeanette Riley

Headteacher: Alyson Rigby

Next Review Date: March 2023