**St. Michael’s CE Primary School**

**Maths Curriculum Plan**



*‘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.’*

Curriculum Intent

At St. Michael’s, we aim for all children to become confident, resilient and determined mathematicians. Our maths curriculum challenges our children to manipulate the knowledge and skills that they learn in order to be able to solve a wide range of question types, drawing on prior knowledge and explaining their understanding as they work. Through small steps planning and focussed questioning, we allow children to deepen their understanding of mathematical concepts, expose and address misconceptions and build the foundations that our children need in order to progress further in their mathematics education.

Our curriculum is constructed around the ‘mastery approach’ to mathematics, with the principles of the approach forming a basis for all maths lessons in our school. We teach our children to become independent mathematicians, to use resources to expose hidden mathematical structures and ideas and to challenge themselves through the application of their understanding. Teachers select purposeful tasks and questions that develop every child’s understanding and guide their learning onto the next, appropriate step. Planning considers procedural variation, to deepen our children’s learning through further highlighting mathematical concepts in a variety of forms, to allow every child to focus on the key concept being taught within the lesson. Teachers also provide opportunities for conceptual variation within lessons, as standard/non-standard examples are considered and discussed.

All teachers understand that a solid, deep, sophisticated understanding of number is congruent with success across the curriculum. Therefore, we strive for all children to continually develop their fluent understanding of number, which they can then use and apply throughout their time at St. Michael’s. Place value and number objectives, including the four operations, are prioritised within our long term planning, to emphasise that these areas of the curriculum are paramount for good understanding and progress.

Curriculum Implementation

* Topic based planning – F/R/PS (whole class and individual)
* Planning should include …. to ensure continuity throughout school
* Knowledge Organisers – provide support at home by allowing parents to see current methods being taught in school to ensure continuity at home and at school
* Resources and representations policy – chn taught how to use independently from a young age.
* CPA approach
* Calculations policy- ensures progression made in the previous year group can be continued by building on calculations taught
* Weekly arithmetic skills and tests
* WR Premium
* Ping-pong style lesson – small steps, constructs are broken down, chn uncover elements of learning
* Mathematical language and terminology – stem sentences, teacher modelling
* Displays – vocab, representations- used to support chn on a daily basis
* Fluency – flower, SODA, TTRockstars
* R and PS – whole class examples as mini-plenaries, independent challenge when work is finished
* CPD – Anthony Reddy training, Numicon training?

Curriculum Impact

The impact of our mathematics curriculum is measured in multiple ways, through both monitoring exercises and the outcomes of our children when they reach the end of each year and their time at St. Michael’s. The maths subject leader(s) are continually monitoring the effectiveness of mathematics teaching across school, adapting targets and action plans as appropriate, by:

* Carrying out lesson observations to observe the teaching and learning within the mathematics classroom. This allows for individual feedback through post-lesson discussion between subject leader(s) and class teachers, and for subject leader(s) to identify areas of strength/development from a whole school perspective. Action planning, including CPD when appropriate, is informed through lesson observations.
* Planning and book scrutiny. This allows subject leader(s) to monitor the design and structure of lessons, the coverage of subject content in the topic planning and the expectations of the work that children complete. Teachers also participate in book scrutiny to allow them to compare their own year group to others in school, particularly paying attention to the year groups directly before and after their own, and to see the progress across year groups. This allows teachers to see how their own teaching fits into the ‘bigger picture’ of a whole school approach.
* Pupil voice discussions. After lesson observations/planning scrutiny/book scrutiny, subject leader(s) ask pupils about their learning to ascertain whether children are retaining their understanding, whether misconceptions are present (or whether that have been addressed and corrected) and whether the children’s understanding is deep enough to enable them to reason and explain what they have learned. This will also allow subject leader(s) to determine whether the skills that the children have learnt could be applied to different situations, paying close attention to real-life situations.
* End of term assessments. At the end of each term, Headstart assessments are completed and data is given to the subject leader(s). This allows the subject leader(s) to monitor attainment and progress across all year groups and to hold pupil progress meetings with class teachers, to identify target groups of children and the gaps in their understanding that need to be addressed.
* Chn are able to use and apply understanding to multiple contexts and are able to choose the most appropriate method for a particular task. Regular teaching of fluency-based skills ensure that all pupils understand and have sufficient time to practise what has been taught.
* Chn can reason verbally and then complete written explanations as they mature which requires the chn to approach the topic with a systematic approach. Being able to explain how they reached the answer is an integral part of the chn’s learning as it allows them to learn through real-life contexts, problems and models.
* Chn are able to apply to a range of problem solving tasks and questions. By teaching the chn at St. Michael’s the basic principles and methods in maths, they will evolve as they move through school, applying their knowledge to real-life situations and contexts.
* Chn can use representations and resources to support and explain. Visual representations enable pupils to make connections between their own experience and mathematical concepts, therefore gaining an insight into abstract mathematical ideas.
* Confidence and resilience. By approaching each topic with an ‘I can do…’ attitude promotes positive thinking in all maths areas. To allow children to work successfully, they need to feel confident about talking through maths concepts and making mistakes along the way. It is important at St. Michael’s that we encourage chn to discuss their ideas, thus providing them with secure contexts.
* Able to use mathematical language independently and confidently. This is vital as it allows chn to communicate abstract, logical ideas with precision and unambiguity.