



St. Michael & St. John's RC Primary School

Mathematics Policy

Spring 2019

St Michael and St John's RC Primary School Maths Policy

1. Introduction

1.1 At St. Michael & St. John's RC Primary school we value every pupil and the contribution they have to make. As a result we aim to ensure that every child achieves success and that all are enabled to develop their skills in accordance with their level of ability.

2. Rationale

The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group and this forms the basis of our mathematics programme. Our curriculum was updated in 2016 with further changes due this academic year (2019). In conjunction with our Written Calculation Policy (**see Appendix**), this ensures continuity, progression and high expectations for attainment in mathematics.

2.1 Aims:

At SSMJ we aim 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;
- 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.
- Foster an enjoyment of mathematics with a can-do, confident and resilient attitude, drawing on and employing a range of strategies.
- Experience Maths taught and celebrated through a cross curricular approach so that children appreciate, understand and recognise the importance of maths in the wider world.
- Are able to think and solve problems mathematically by using the appropriate skills, concepts and knowledge. We provide this within rich and enjoyable maths lessons and through a cross-curricular approach. Maths lessons take place from Foundation Stage to Year 6 based on EYFS and the National Curriculum for Mathematics.

This policy is set within the context of the school's vision and aims regarding teaching and learning. As a result of their learning in mathematics and cross-curricular problem-solving, pupils will:

- Be prepared for applying these skills in everyday life situations, in their future learning and in the work place
- Have the building blocks in place to provide a solid foundation for secondary, further and higher education.

Through teaching with a problem-solving approach, children will learn to understand, distil and clarify information; consider what they know which will help them to address a challenge; create systems and strategies, organising information in such a way that helps to find patterns and ultimately solutions; communicate and present their findings effectively.

3. Principles of Learning.

3.1 At SSMJ, we aim to ensure that lessons are engaging and challenging, drawing upon a wide range of teaching styles and strategies in order to cater for individual learners.

- As a result, in some lessons you may see examples of whole class teaching in line with the principles outlined in the 'Essence of teaching for Mastery' document published by the NCETM.
- Lessons will be vibrant and enjoyable, with teachers using a range of resources including models and images to develop children's mathematics within a concrete, pictorial, abstract approach. Children will be highly engaged and challenged through discussion and mathematical talk, utilising skills of reasoning and explanation alongside accurate use of mathematical vocabulary.
- We follow a clear policy for written calculations that is in line with the new National Curriculum and this includes the use of practical resources to aid understanding at every stage.
- We also have non-negotiables for each year group which cover the essential number skills required for mathematical fluency.

4. Planning.

- Planning begins from a thorough understanding of children's needs, gleaned through effective and rigorous assessment and tracking (using O Track), combined with high expectations and ambition for all children to achieve.
- Medium Term planning will outline the areas of mathematics that will be taught during the term to ensure coverage of the New Curriculum 2014.
- Within short-term planning, clear success criteria for each learning objective will be created - demonstrating the progression required to reach and exceed the objective.

- Planning, where possible, should involve real-life contexts for mathematics, where children are problem-solving with a purpose in mind.
- Class teachers should regularly plan for children to apply their mathematics skills to different problems within maths lessons and across the curriculum. This will also allow children to revisit, practise and consolidate areas of mathematics, using them in other contexts.
- When planning mathematics and across the curriculum, questions should be used within titles of work and lessons, to initiate an 'enquiry' approach.

4.1 Our school scheme of work is composed of ongoing plans produced on a week by week basis. It is developed from White Rose Mathematics and takes into consideration the needs of all our children. (<https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/>)

4.2 Children with special educational needs are taught within the daily Maths lesson. They are encouraged to take part using strategies such as:

- Stepped activities which become progressively more difficult.
- Common open ended tasks where differentiation is by outcome.
- Additional practical resources e.g. counters or cubes.
- Mixed ability Maths Partners

Where applicable, children's POP's incorporate suitable objectives from the National Curriculum and teachers keep these objectives in mind when planning work.

Additional support staff liaise with the class teacher in supporting SEN pupils.

Teachers ensure that any gifted, able or talented pupils are appropriately challenged.

4.3 Throughout the whole curriculum, opportunities exist to extend and promote mathematics.

5. Teaching and Learning Style.

5.1 A variety of teaching and learning styles are used based on three principles:

- A minimum of at least a 50-60 minute mathematics lesson every day.
- An opportunity for Mathematical conversation in class.
- An emphasis on mental calculation.
- The timetable has been adjusted to include an additional short daily Maths session to address non negotiables/ a variety of learning objectives as identified for the class.
- A typical lesson in Years 1 to 6 will usually include oral work and mental calculation. This will involve whole-class work to rehearse, sharpen and develop mental and oral skills.
- The main teaching activities will include both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work.

- Teachers and teaching assistants intervene as needed to identify misconceptions and ensure progress.
- Each class are taught the objectives set out for their year and use as a starting point, the medium term plans set out by The White Rose Math's Hub.
- Teachers use a range of supporting documents and resources such as assessment materials from NCETM to supplement their planning.

5.2 Our pupils should:

- have a well-developed sense of the size of a number and where it fits into the number system (place value)
- know by heart number facts such as number bonds, multiplication tables, doubles and halves
- use what they know by heart to figure out numbers mentally
- calculate accurately and efficiently, both mentally and in writing and paper,
- draw on a range of calculation strategies
- recognise when it is appropriate to use a calculator and be able to do so effectively
- make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2D and 3D shapes

5.3 Children have the opportunity to independently choose and use a wide range of resources, such as number lines, number squares, digit cards and small apparatus to support their work.

5.4 Written methods of presenting and recording work follow a set format across the key stages (see Written Calculations Documents).

5.5 Differentiated work by task or outcome caters for children who are gifted, able or talented, as well as children with learning difficulties.

6. Assessment.

6.1 Assessment for learning will occur throughout the daily maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This 'next-step' feedback is expected to be incisive and regular.

6.2 Children will self- assess against the learning objective and success criteria, giving them a sense of achievement. Children should know when they are meeting their targets and be self-assessing against those too.

6.3 Pupils' work will be marked in accordance with the school Marking Policy and contain 'next steps' guidance, modelling how corrections can be made and giving pupils the opportunity to learn from any misconceptions. Future lesson planning will be dependent on class success evaluated through marking and observations made during the lesson.

6.4 Assessments are conducted to measure progress against the National Curriculum Key Learning Indicators of Performance (KLIPS) every term. APP (Assessing Pupil Progress) is an ongoing form of assessment used to monitor individual progress. Samples of pupils work are kept to track children across both key stages and information is regularly inputted into our school assessment System (Otrack). End of Unit Assessments and Block assessments are completed linked to the White Rose Material. Summative end of term assessments are completed (PUMA) which give a standardised score.

6.5 Assessments are used to inform parents of children's progress at Parents Evenings twice a year and termly reports are written. At the start of and through the academic year targets are set based on each child's prior attainment and these are tracked.

7. Tracking And Intervention

7.1 At St. Michael & St. John's we aim to provide children who are not making good progress, with extra support through interventions. Interventions in maths should be based on developing key number skills that are appropriate for the children involved.

7.2 Interventions in maths will be tightly planned, with success criteria set and assessments made frequently to ensure progress is being made. Whilst interventions may be carried out by Teaching Assistants, it is the teacher's responsibility to decide what is being taught and how it is being delivered. Communication between teacher and TA is vital and should involve regular meetings and updates.

7.3 From tracking, we identify any group or gender issues and plan initiatives to address these. We also examine the progress of ability groups as well as Pupil Premium children and those with a Special Educational Need and children for who are EAL registered. Where data indicates a whole school issue, it will influence the School Development Plan. For class issues these are identified by members of staff and addressed.

8. Role Of The Subject Leader

- Ensures teachers understand the requirements of the New Curriculum and helps them to plan lessons. Leads by example by setting high standards in their own teaching.
- Prepares, organises and leads CPD and joint professional development.

- Ensures that St. Michael & St. John's is kept up to date with the latest national primary mathematical initiatives e.g. Maths Mastery and the Shanghai Maths Project.
- Works with the SENCO and is a member of SLT.
- Observes colleagues with a view to identifying the support they need.
- Discusses regularly with the Headteacher and the mathematics governor the progress of implementing National Curriculum for Mathematics in school.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
- Works with Cluster schools on the development of the subject.

9. Governing Body.

9.1 Our Maths Governor visits the school termly to talk to the Maths Co-ordinator and when possible to observe Mathematical activities.

9.2 Maths Governor reports back to the Governors Curriculum Committee on a regular basis.

9.3 Maths Governor receives the Maths Action Plan and Subject Monitoring Reports termly

10. Homework.

10.1 It is our policy to provide parents and carers with opportunities to work with their children at home at least once a week.

10.2 Homework may be written, mental or involve the use of ICT (such as Times Table Rockstars).

11. As we work towards teaching for mastery in mathematics

We aim for each child to:

- Have a positive attitude towards mathematics and self-confidence in their ability to deal with mathematics;
- Be able to work systematically, co-operatively and with perseverance;
- Be able to think logically and independently;
- Experience a sense of achievement regardless of age or ability;

- Understand the appropriate underlying skills, concepts and knowledge of number, measurement, shape, space and handling data;
- Be able to apply previously acquired concepts, skills, knowledge and understanding to new situations and problems; both in and out of school;
- Be able to communicate with peers and adults, ideas, experiences, questions, clearly and fluently, using the appropriate mathematical language;
- Be aware of the uses of mathematics beyond the classroom;
- Encourage the use of mental calculations and efficient strategies to work out the answers.

Signed _____

Date _____

Approved by Governors _____

Review Date: Autumn Term 2019.

