



Marsh Green Mathematics Policy

Rationale: At Marsh Green we aim to inspire all children to reach their full academic potential. In mathematics this means ensuring a curriculum that is fully inclusive of all children which:

- Develops children's knowledge and understanding of Mathematical concepts whilst enabling them to practice and hone skills and methods;
- Enables them to think critically and communicate their understanding;
- Gives them opportunities to apply learnt mathematical skills in different contexts across the curriculum.
- Provides opportunities to develop problem solving skills useful for maths and across the curriculum.

This policy is set within the context of the school's vision, aims and policy on teaching and learning. As a result of their learning in mathematics and problem solving across the curriculum children will:

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

Through teaching with a problem solving approach, children will learn to generalise and prove their theories by digging deeper to find reasoning. Children will learn to explain their solution, convince somebody that it's correct and justify their conclusion. They will learn to address problems with a trial and improvement approach, learning that 'having a go' is a great way to start and whatever happens, they will have learnt more about the situation and can tweak their approach. Children will also face logic puzzles where they will have to consider what they know and organise information in a way that helps them to find patterns and ultimately solutions, which they will then communicate in an effective way.

Principles

Planning

- Planning begins from a thorough understanding of children's needs gleaned through effective and daily teacher assessment and prior learning, 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 National Curriculum.
- Within short term planning clear differentiation for each objective taught should be created, using the timelines to ensure full coverage. This enables the class teacher to follow a systematic approach.
- A child's starting point will come from the prior learning assessment. This ensures that children are receiving the appropriate challenge.
- Where children are working below or significantly above the objectives, they will be challenged through breadth and depth in line with the current year group objectives using problem solving to enrich their learning.
- Where children are working significantly below objectives they will work through the lower age group objectives to ensure coverage of the curriculum strands, also completing prior learning to assess starting points.
- Class teachers should regularly plan for opportunities for children to apply their maths skills to different problems within maths lessons and across the curriculum. This will also allow children to revisit, practice and consolidate different areas of maths and apply them within different contexts.
- In the Foundation Stage, children are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through a combination of short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration.
- Children will become very competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. Counting forwards and backwards in many different sized steps as well as from different starting and ending points is essential.
- Maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations.
- Bar modelling is used throughout the school to unpick problems.

- Children should be encouraged at all times to communicate their understanding of maths so that it clarifies their thoughts.
- Children's mental maths is of great importance, with number bonds, times tables facts and various strategies for calculation taught and practiced at school with support sought from parents through homework activities. A progression towards efficient written calculations should be developed and applied consistently in each year-group. The school Calculation Policy should be followed.
- Though the nature of lessons will be very different depending on the needs of the class, children should be: active; practicing skills they haven't yet mastered (perhaps recapping on personal targets); learning something new OR learning to apply their knowledge to different contexts. They should be: working at a good pace and being productive; sharing their thoughts and methods and being successful.
Assessment for learning should occur throughout the entire maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.
- On a daily basis children should self-assess against the learning objective and success criteria, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too.
- Pupil's work should be marked in line with the Marking Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.
- Future lesson design should depend on class success evaluated through marking and observations made during the lesson.
- Assessment of pupil work and progress is ongoing by the class teacher and informs future planning. Teachers mark work in mathematics in line with the school marking policy.
- Summative assessments are made at least once per half term in order to provide further understanding of the level a child is working at and to inform a more rounded judgement of their abilities.
- Tracking is used in order that children who are not making good progress over time can be targeted for support in one form or another. What that support is and how intensive, depends upon the child's needs and it may be a simple strategy within whole class teaching that is needed. Where further support is deemed necessary, children can access interventions, explained below.
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Display and Resources;

- In the classrooms there should be, either on display or easily accessible to children, level 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.

Guidance for Teachers and TAs;

- Class teachers should complete medium term plans which will consist simply of objectives that they plan to teach during the term (based on their understanding of what children need to learn next). From this, daily short term plans should be completed to the agreed pro-forma.
- When planning, class teachers should highlight objectives that are linked to the maths targets in the front of children's books so that teacher assessment and self-assessment can take place.
- Teachers are also to highlight completed objectives on their working timelines, in order to see the full picture of the children's learning journey.
- Resources to assist with the planning, teaching and assessment of mathematics can be found in the shared area of the school's computer network. Resources that can be found there include: calculation policy; problem solving resources (including word problems); pupil target sheets and mastery documentation for the more able children
- There is a published scheme (Collins) to support with the teaching of mathematics (yr1 - 6). However, teachers should use resources which best fits the success criteria - these might come from the published schemes but might come from elsewhere.
- Early work during registration times (S.O.D.A) should be set up by the class teacher so children can revisit, practice and consolidate previously learnt areas of maths.
- In year one, 'Inspire Maths' is being used.

Tracking and Intervention:

At Marsh Green 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. These can be located in the shared area of the school's computer network. Intervention provided to boost children's progression in maths should be tightly planned, with success criteria set and assessments made frequently to ensure progress is being made.

We identify from tracking any gender issues that exist and plan initiatives that would address these as part of teacher performance review meetings where children's performance is evaluated on an individual basis with class teachers. We also examine the progress of ability groups and those with English as an additional language, those entitled to the Pupil Premium and those with a Special Educational Need. Where data indicates a whole school issue, it will form part of the Action plan which runs alongside the School Development Plan.

Monitoring:

Monitoring of children's progress begins with books being scrutinised by the senior leadership team, but continues with the subject leader evaluating further evidence to ensure children are making progress. This monitoring happens through examination of work in books, pupil interviews, analysis of assessment results and the assessments used, and through other means depending on what information needs to be gleaned.

Following monitoring activities feedback is given to staff about how they can strengthen their practice and CPD (professional development) opportunities built in where it would be deemed valuable. These might take the shape of inputs during staff meetings or by a variety of other means.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject leader in order to evaluate their impact. Findings are reported to the head teacher and governors through use of the 'Subject Leader's Ongoing Report' to inform future planning of intervention.