

THE GROVE PRIMARY SCHOOL MATHEMATICS POLICY



Intent, Implementation & Impact

Making magnificent mathematicians

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At The Grove Primary School we follow a mastery approach. We believe all children are entitled to a strong mathematical foundation, enabling them to show the Characteristics of Effective Learning in mathematics.

This is underpinned by practitioners' understanding of children's possible mathematical learning trajectories and a belief that all children are effective mathematical learners, despite their previous experiences.

In the Early Years Foundation Stage and Key Stage 1, this is achieved during both child-initiated play, and adult teaching through meaningful contexts. All children have daily moments where they explicitly engage with mathematical concepts and language. In Key Stage 2, children are entitled to daily lessons that involve and interest them in mathematics.

Pedagogy

In all phases, adults:

Provide:

- daily routines with mathematical opportunities – wake up shake up, date, time, tidying up etc.
- games – tracks, targets, hiding and counting
- number talk, rhymes, books and stories
- exploration with shape, space, measures & numbers, e.g. construction
- familiarity & investigation with adult tools e.g. calculators, timers, scales

Engage children with:

- 'Low floor, high ceiling' problems to solve creatively
- The option to choose and follow their mathematical interests
- A repertoire of mathematical language, representations & recording

Use teaching strategies:

- being playful with mathematical ideas - making deliberate mistakes, testing ideas with ludicrous suggestions
- 'sustained shared mathematical thinking' with children - e.g. 'What if...'
- ongoing observation and assessment of learning trajectories

Are disposed towards:

- being enthusiastic and interested in maths
- being curious about children's reasoning & expressions of their thinking
- supporting children to be resilient and take risks, spot patterns and make connections
- high quality observation and reflective practice

Pedagogy Statement adapted from the Early Childhood Maths Group 2019.

Planning

Planning is for the teacher and should be set out in a way that supports them. We do not require teachers to type out lessons onto a proforma unless this is helpful for the individual.

Instead, staff are asked to periodically upload their lesson slides to the SharePoint. To support teachers, coordinators have compiled a wide range of resources to assist with planning for small steps. These can be found in the maths file on the SharePoint.

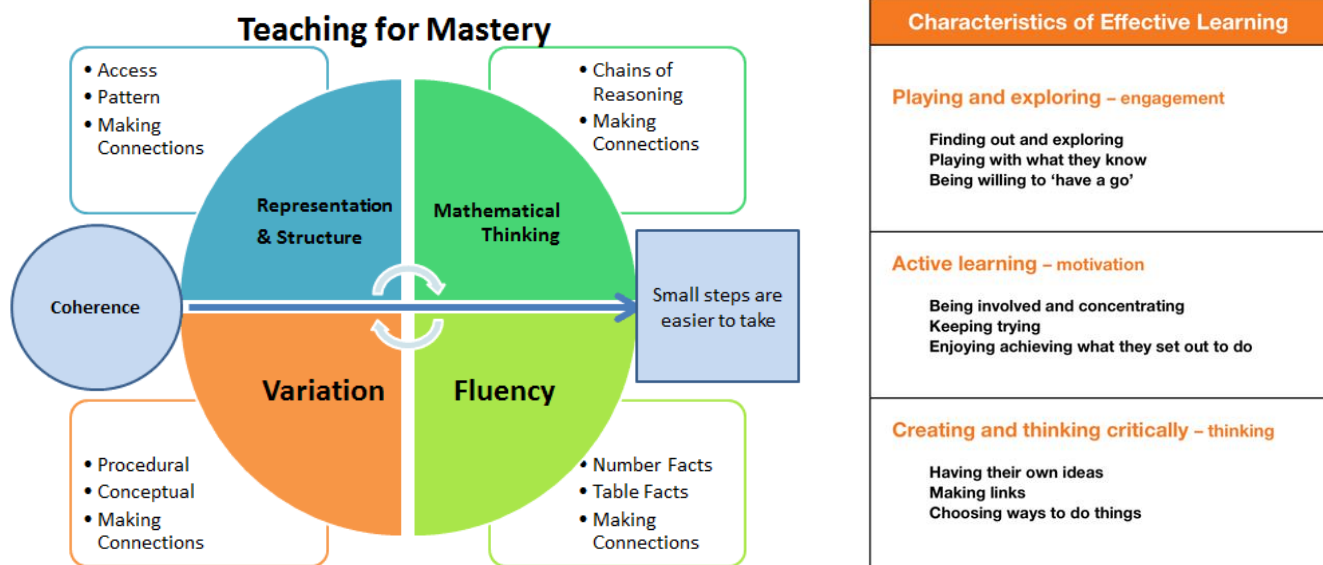
Curriculum Content

Teachers in Early Years use a document compiled from NCETM EYFS guidance, Learning Trajectories and Development Matters to assist in their planning. Key Stage 1 and 2 teachers follow the National Curriculum for mathematics and plan from the programmes of study. Staff supplement the National Curriculum with the White Rose and NCETM PD materials, among other resources, to build their planning around. The materials provide rich explanations and ideas for developing children’s fluency, reasoning and problem solving.

Lesson Design

Teaching for mastery rejects the idea that a large proportion of people ‘just can’t do maths’. The focus of lessons is on all pupils working together on the same content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind. If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class in the next lesson. If a child grasps a concept particularly well, teachers will have challenges planned and ready to further extend their learning. These challenges may not always be recorded in books.

Lesson design should take into account the 5 Big Ideas (NCETM, 2017). Teachers should consider how to bring each idea to each lesson. The NCETM PD materials provide a plethora of ways in which these can be applied to lessons and objectives. Teachers from Nursery to Year 6 should also consider the Characteristics of Effective Learning. Mathematics should be explorative at all ages.



Lessons should embody these 8 Positive Norms as adapted from Dweck (2007) and Boaler (2018):

- Everyone can learn mathematics to the highest levels.
- If you ‘can’t do it’, you ‘can’t do it yet’.
- Mistakes are valuable.
- Questions are important.
- Mathematics is about creativity and problem solving.
- Mathematics is about making connections and communicating what we think.
- Depth is more important than speed.
- Maths lessons are about learning, not performing.



Books

Books form one part of a child's mathematical journey at The Grove. Teachers are encouraged to use concrete, pictorial and abstract approaches to learning. Not all of these will be recorded. Teachers will only record work when it has a direct impact on developing children's understanding and mathematical practice.

In books we hope to see:

- A coherent journey or 'story' in mathematics.
- Evidence of the 5 Big Ideas and Characteristics of Effective Learning.
- Opportunities for children to become fluent, reason mathematically and solve problems (the three aims of the National Curriculum).
- Children recording in a way that makes sense to them.

In books we do not expect to see:

- Excessive photos of practical work.
- Differentiation by task.
- A set amount of work per week.

Marking should follow school policy.

Assessment

Formative assessment happens throughout lessons. Teachers' use of open and closed questioning helps to assess where children are working. Feedback can be oral or written and should support the child in moving to their next step. Teachers use formative assessment to inform their planning.

Summative assessment happens at the end of each term. Children are assessed against what has been taught and are noted as achieving Working Below the Standard (WBS), Working towards the Standard (WTS), Expected Standard (EXS), Greater Depth Standard (GDS). Teachers upload this data to the SharePoint.

Monitoring

Teachers are not required to undergo formal, graded lesson observations. Mathematics teaching and learning is not judged on single lessons. However, teachers may work together to observe, plan and teach. Opportunities for teachers to work collaboratively happen periodically throughout the year. Once a term, coordinators will complete *lesson visit* during a maths session. These may be accompanied by other staff or governors. The purpose of this exercise is to talk to children and to discuss their opinions and feelings around mathematics.

Additionally, staff review written work in termly *Book Looks*. These can be conducted as a whole staff, in small groups or by the coordinators. Assessment data is reviewed at the end of Autumn, Spring and Summer terms. Coordinators speak to staff about children who are behind, working at the expected standard and those who are working at greater depth. Coordinators moderate judgements with staff. Additionally, teachers participate in cluster and county-wide moderations.

Monitoring is seen to be supportive as everyone wants to do their best for the children. Feedback is given either one to one or a general overview is given in staff meeting. Coordinators use monitoring to plan for next steps and future continuous professional development.



Continuous Professional Development

Coordinators lead multiple staff meetings throughout the year on many aspects of maths. It is expected that the impact of these is seen through monitoring processes. Coordinators keep up to date with the latest developments in the subject by working closely with maths hubs, the local authority and by accessing research and other CPD online. All staff are expected to engage in CPD both in and out of school. Courses are seen as a time to reflect and grow practice. All staff will participate in maths specific CPD multiple times each year.

Impact:

We hope children of all dispositions develop an enjoyment and confidence in mathematics. From learning walks we have noticed children are willing to have a go and persevere in maths. We want pupils to develop a strong number sense through playful and practical teaching and learning. We hope children can express and record their ideas in their own ways and develop mathematical vocabulary to describe the world around them.

By drawing on strategies from successful jurisdictions across the globe, other research and from best practice at The Grove, we believe the mastery approach will have a positive impact on all pupils understanding of mathematics.