



What does Maths Mastery look like at Barrow Hedges?

What will you see in our maths lessons?	What does this look like?	Why is it important?
Micro-progression in weekly and daily planning	Small steps will be made each lesson to develop a secure understanding. The small steps that were learnt in the previous lesson will be reviewed before moving on.	By breaking down concepts into small steps, children are more likely to be secure and confident. By grouping key concepts and patterns, they will be able to make connections to other areas of maths and apply their skills to a range of problems.
Carefully planned questions	Specific questions will be planned into every lesson. A range of questions will be asked to develop children of all abilities and extend children working at greater depth.	Questioning allows children to think about what they are doing and why. Differentiated questions will deepen the understanding of all abilities.
Children moving at broadly the same pace	Most children will be working on the same area/concept/pattern at the same time. Only children who are working significantly lower than age related expectation will work on other areas that will help them to be secure in basic number facts and concepts, and children who are working significantly above ARE may be given separate extension activities.	This allows all children to access the curriculum at the same time, with varying depth to their understanding. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind. Keeping the class together working on the same content encourages the mastery belief that every child can succeed.
Mixed ability groups and pairing	All children work in mixed ability classes and on mixed ability tables/pairings that have been carefully planned. Year 6 is the only exception, where the children are streamed. Adults will float between tables to support and question children to deepen their understanding, and will provide flexible grouping or focused support, where necessary. If any group has been identified as having struggled in a previous lesson, an adult may support them.	By working in mixed ability pairings and groups, the higher attaining children can develop their communication skills and ability to explain what they are doing and why. This also allows lower attaining children to have a good role model and the support of another child. The essential features of teaching for mastery in maths: working to develop understanding, keeping the class together working on the same content and believing that every child can succeed, can be applied in either mixed attainment, setted or streamed classes.
Ping-Pong style teaching	Ideas and activities regularly move from teacher to children and back again. Planned mini-plenaries will take place during independent tasks.	Children need to be engaged and take ownership of their learning. Through short tasks and discussions, children will work things out independently/in pairs rather than being told what to do by the teacher. The teacher's role is to guide/focus the learning and support children to vocalise and record their ideas.
Procedural Variation: teaching specific concepts and patterns within a lesson	Children will be taught rules and patterns within areas of maths rather than just a technique to find an answer. Questions will be specifically designed to gradually introduce/change one new thing at a time.	Children need to be able to identify patterns so that they can make connections to other problems and calculations. By understanding what happens to numbers, they can explain why patterns occur. They will then be able to spot mistakes and understand why they are wrong and why.



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<p>Conceptual Variation: using many different concrete and pictorial representations across all ages and abilities</p>	<p>All children, of any ability, may be using the same resource at the same time, and all are encouraged to use a range of resources. Each classroom has an area with maths resources, which all children have access to.</p>	<p>It is important to allow all abilities to see concepts in a range of different representations. They will help them to explain, make connections and see patterns. Some children can find it difficult to visualise concepts; this gives all children an opportunity to use visuals to support their understanding.</p>
<p>Layered tasks that gradually deepen a child's understanding by applying new concepts/skills</p>	<p>Lessons are planned to build upon prior knowledge from the lesson before but also within the lesson. Independent tasks will be carefully planned to deepened children's understanding as they move through them; they will all be based on the same concept. Chilli challenges are used to give children the opportunity to practise different skills: fluency (1), application (2) and reasoning and problem solving (3).</p>	<p>All children must show they have grasped a new concept but this should be achieved through a range of problems. Through giving independent activities that gradually get more difficult in small steps, children can build upon what they already know and make connections. Children are encouraged to deepen their understanding through a range of reasoning and problem-solving questions.</p>
<p>Opportunities for greater depth throughout the lesson that can be accessed by all abilities</p>	<p>Greater depth opportunities should be planned into the whole lesson through different representations and carefully planned questions. 'Greater depth' will be evident by the completion of 'Greater Depth Challenges' (4 chilli challenges) and through verbalised and written explanations. This may be supported by 'Maths Mastery Challenge' prompts, which are displayed in all classrooms.</p>	<p>It is important to give all abilities the opportunity to deepen their understanding. If they never have access, their real capabilities may not be apparent; this will help to develop confidence and self-esteem across all abilities.</p>
<p>Precise use of mathematical vocabulary in full sentences</p>	<p>All children will be expected to understand and use the correct mathematical vocabulary when they explain their maths. They will be expected to speak in full sentences when sharing an answer, and may be asked to write in full sentences. Teachers' marking will further encourage the use of precise mathematical vocabulary. Relevant vocabulary will be displayed in the classroom and on the Working Wall.</p>	<p>If children know a range of specific mathematical vocabulary and words that are similar and relate, they will feel more confident when facing a new problem. If children speak in full sentences, they are more likely to understand and be able to explain why.</p>
<p>Emphasis on secure number facts</p>	<p>Most children, by the end of Year 1, will know number bonds within 20. By the end of Year 4, most will know their times tables to 12x12. Children will be taught times tables during maths lessons and tested through 'mathletics' every week. Discrete arithmetic sessions are taught 3 times per week and arithmetic is tested each Friday.</p>	<p>If children are secure with number facts, they will be able to face calculations with more confidence and will not have to over-complicate these by having to work out the number facts within them. Children will be able to focus on the methods rather than the number facts needed to find the answer.</p>
<p>Immediate intervention before the next session</p>	<p>All children will aim to at least show an understanding of the 'fluency' and some of 'application' element within a lesson. Adults in lessons will quickly identify children who are struggling within a lesson. They will either be supported straight away or given an opportunity to spend more time on the same area before the next lesson. If many children are not secure/the same misconceptions are arising, teachers will adapt the planning for the next day to address this.</p>	<p>By ensuring children have a secure understanding before they move on, gaps will not arise. Most children will then be able to move on at broadly the same pace.</p>