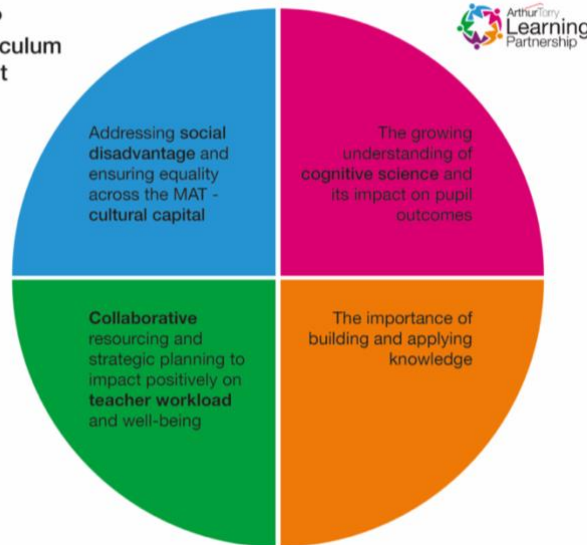


Intent:

ATLP
Curriculum
Intent



Maths Vision

Taken from the National Curriculum, our aims at William MacGregor are to ensure that all children become fluent, can reason and explain mathematically, and are able to solve problems as well as to foster an enthusiasm and fascination about maths. We want to increase pupil confidence so they are able to express themselves and their ideas using the language of maths with assurance. We want the children to see mathematics as being relevant to their world and applicable to everyday life as well as being something that they will need as they move on through their education and beyond, to the world of employment.

Key features of our curriculum:

Very often it is heard that people feel they are 'no good at maths' or 'can't do maths'. William MacGregor have chose to champion a 'can do' attitude towards maths so that if a child feels that they 'can't do maths' they are empowered to think that they 'just can't do it yet'. We want children to achieve more than they believe they can achieve, and this will happen with a growth mind set approach.

Learning maths and the language of maths is a little like learning a foreign language. As children become more fluent in the language of mathematics and become increasingly able to reason and explain their thinking mathematically they become increasingly able to solve problems in a range of contexts, making links between ares of maths and proving their answers by using a wide range of mathematical thinking.

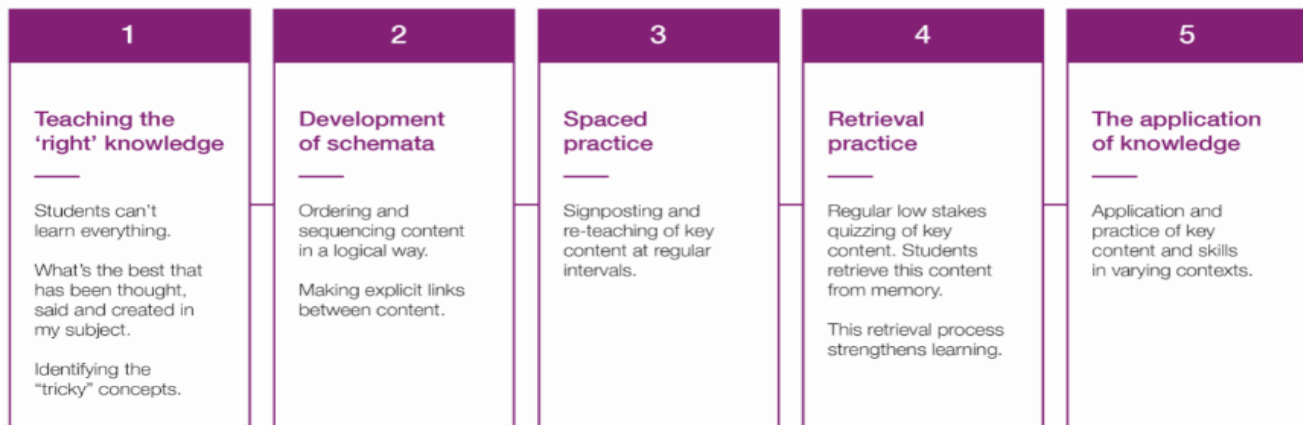
Teaching Approach: KS1 and KS2

At William MacGregor we teach a mastery approach to maths. We achieve this through careful lesson design that builds new learning on previous learning through small, coherent steps with a focus on one concept at a time, in depth. Children work together in mixed ability groups on exploring mathematical concepts through the use of concrete and pictorial resources, guided mathematical thinking, varied practice and fluency practice. We do this because we want to produce natural and long lasting mathematicians beyond primary education.

Teaching Approach: Early Maths Development

In reception we follow the Number Blocks scheme to teach number, space and shape. We heavily focus on the numbers 0-10 to develop mastery whilst exploring numbers 11-20 through play and continuous provision. Children are taught and encouraged to use the correct mathematical vocabulary in order to provide them with secure foundations so to build upon during the rest of the primary curriculum.

Implementation:



Teaching Principles:

Teachers are to design lessons that incorporate elements of the five big ideas: coherence, fluency, variation, representation and structure and mathematical thinking. Learning is broken down into small, connected steps, building from what pupils already know. The lesson journey should be detailed and evidence on presentations as there is no requirement for teachers to produce detailed paper plans. Teachers use the NCETM Primary Mastery Professional Development materials in order to develop a coherent and comprehensive conceptual pathway through mathematics. Teachers are encouraged to deviate from NCETM documents and make use of other mastery teaching support such as White Rose materials, as well as their own professional judgement and teaching expertise, to enhance understanding of concepts.

The mastery approach to maths withholds the mantra, 'leave no child behind'. In order to ensure all children are given opportunities to master concepts in maths, children of all learning backgrounds should be given the appropriate resources, scaffolding and support so that they can achieve the objective within the lesson. When this is not achieved, such children should be given additional support after the lesson or at the start of the next lesson so that they have caught up with the rest of the class.

iPads/technology

In some lessons, iPads are used as math book replacements, and children complete questions on a document that has been uploaded to their Showbie account. This supports children's engagement, becoming IT literate and lowering resource costs.

In other lessons, IT should act as additional support towards securing fluency in the concept being taught and/or providing progression opportunities to those children who have rapidly grasped the concept.

Examples:

If a child or group of children need reminders of place value while completing learning on multiplying and dividing ten then support can be provided on the iPads in the form of an app or crib sheet uploaded to their Showbie account.

If a rapid grasper needs support on using appropriate mathematical language to reason, sentence stems could be placed on to the iPad or children could complete their reasoning using voice recording apps.

Professional judgement should be used here to support the best possible outcomes.

Teaching Principles Cont:

Inclusion:

The math mastery approach champions that ALL children becoming fluent in mathematical concepts, are able to problem solve using such concepts and are able to reason about concepts using mathematical language.

In order to achieve such aims, William MacGregor puts into place provisions to allow this goal to become within the reach of achievement. Teaching should accommodate the use of concrete apparatus to help children to visualise mathematical concepts. The following resources are made available to all teachers to implement in their teaching: tens frames, Numicon, place value counters, bar modelling magnets, counting sticks and a variety of other supporting equipment.

Sentence stems are used throughout teaching to support children's understanding of concepts and are encouraged to be used in all math discussions. Modelling of mathematical language by teachers equips children with the correct vocabulary in order to reason about maths.

Children who appear to perform above age in the learning and understanding of a concept are known as rapid graspers, bearing in mind that they are rapid for that concept only. These children should be challenged to explain their understanding precisely using appropriate vocabulary and extend learning to many different problems, including problems of the concept at a later date. Such spaced retrieval tasks will support long term and embedded mathematical learning.

SEN

Children on the SEN register or those who are being monitored, will access learning through tailored approaches.

- Some children will be involved in the same class input and activities but given additional resources to support their learning, mirroring the whole class mastery approach to learning.
- Some children may be involved in the same class input, however, their activities will be adjusted in order to meet their individual needs.
- Some children may be given alternative input and activities, dependent on their current understanding of the concept being taught.

In all circumstances, teachers are required to use their professional judgement and the children's Personal Learning Plans in order for SEN children to make progress.

Staff Development:

Staff will take part in regular CPD to support their teaching of mathematics within the classroom. Staff will complete research such as reading to develop their knowledge of mastery mathematics. Staff are required to feedback to leaders on strengths and developments of the teaching of the subject so provisions can be put into place to enhance the teaching of the subject.

Assessment:

Assessment from spaced retrieval activities should highlight which additional learning on concepts need to take place (formative assessment).

Children are assessed on entry to their year group and at the end of each term (summative assessment). Results from these are analysed to inform focus areas for the following term. Teachers should use assessments that best fit the concepts that they have been teaching, this may include creating own assessment questions so that all concepts are assessed and judgements are accurate. In addition, Year 2 and 6 will also assess children using past SATs papers. At the end of the final term, areas of development will be forwarded on to the next teacher.

Monitoring:

Monitoring is undertaken by the subject lead, as well as members of the senior leadership team. The focus is directed by the 2020 monitoring form (see attached document), informed by any whole-school or staff specific focuses, such as small steps in mastery learning. It can be made up of one or a combination of: pupil conversations, professional discussions with staff, and lesson observations (all of which would involve looking through evidence of learning in books). Leaders monitor the quality of teaching, providing feedback to ensure that teachers are providing high quality Mastery Maths lessons. Feedback is then given promptly with the intent of developing practice, followed by a discussion if clarification is needed or to plan CPD that would be beneficial.

Moderation:

Moderation of children's attainment and progress levels take place on a termly basis during pupil progress meetings. Prior to these meetings teachers are expected to analyse and complete a data sheet, which will contain information on groups of children and specific children.

Teachers will prepare for this by reviewing previous actions outlined during the previous progress meeting. Teachers will be challenged on judgements made with the expectations of articulating evidence to justify. Evidence from monitoring and results from assessments should be used to guide professional conversations. Meetings will conclude with a new set of actions that should inform the next terms monitoring aims.

Work-life balance:Marking

Marking of learning (books and iPads) should be completed in line with the William MacGregor marking policy. Next steps are not necessary as the next lesson is normally the next step in learning. However, it is essential that marking picks up and addresses any misconceptions/mistakes and thorough questioning ensures children have clarified their thinking clearly.

Classroom

Concrete equipment should be made readily available for children to access independently to support their own learning. Working walls should display support towards the current concept being taught and updated on a ongoing/weekly basis. Sentence stems are to be displayed for the children to refer back to during their learning.

Home learning

All children have access to the below mathematical apps to support their fluency in number and are recommended to use them on a regular basis:

- Maths Shed
- Times Table Rock Stars
- Espresso

In Year 2 and Year 6 maths homework is compulsory. Children should complete maths homework once a week. Children in these year groups are given a CGP maths workbook and 1 or more pages are to be completed at a time. Alternative homework should be created or sourced by the class teacher when CGP books are not used. This should be no more than an A4, double-sided paper.