



HAWKESLEY CHURCH PRIMARY ACADEMY

MATHS POLICY

'Let your light shine' Matthew 5:16

INTENT

At Hawkesley Church Primary Academy we aim to ensure that all children are number literate, this means having the confidence and *skill to use* numbers and *mathematical* approaches in all aspects of life. Mathematics is a creative and highly inter-connected discipline is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

The national curriculum for mathematics aims 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
- can 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.

The Programme of study for Mathematics at Hawkesley Church Primary Academy is a whole concept approach. We have designed a programme that allows children to increase their speed and recall of times times facts quickly, thus positively influencing their arithmetic skills. We aim to promote fluency of the fundamental skills of mathematics, encouraging reasoning and providing opportunities for problem solving. It is our intention that these elements all interconnect with each other, building upon prior learning, connecting their knowledge of different areas within Mathematics, exploring deeper into their understanding and ensuring that they are ready for their next stage of learning.

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ARITHMETIC

Developing the children's Arithmetic skills is an essential part of the programme at Hawkesley Church Primary Academy. Our programme ensures that children have a fluency in number, an essential first stage in developing conceptual understanding Maths. It has clear progression through blocks of teaching units across each year group, following the sense of number visual calculation policy.

Why is arithmetic important?

- Arithmetic skills are essential building blocks for Maths
- Arithmetic is a key basic skill for adults and children throughout everyday life
- Developing conceptual understanding of arithmetic saves time on calculations
- Fluency in arithmetic helps pupils to flexibly approach Maths problems

HOW?

- Based upon the NFER arithmetic tests from the summer term, gaps in learning will be identified and teaching to close these will be shown in the medium term planning for September
- Teachers will revisit prior learning in 'recap' starters to continually reinforce concepts
- Teachers will explicitly teach Arithmetic skills during the Arithmetic Starter – this will be necessary at the start of the academic year, before moving away from this (as required) in the summer term, where it will be practicing the skill
- At the end of each half term, White Rose arithmetic tests will be conducted and a gap analysis of these will inform the following half term planning
- NFER arithmetic tests will be carried out termly, again analysis of these will inform the following half term planning
- We shall use the 'Seven Steps to Success for Arithmetic' document to support our teaching:
 - 1) Identify the top priority
 - 2) Teach the skill
 - 3) Ensure the skill is mastered
 - 4) Use the skill in all the ways it might appear in an arithmetic question
 - 5) Solve problems where using the skill is necessary
 - 6) Revisit the skill (by stealth) a week after the last explicit teaching
 - 7) Revisit, revisit, revisit.

IMPACT

The impact of the implementation of Arithmetic across the school will be assessed formally through NFER tests in Years 1,3,4 and 5 each term and through National Assessments within Year 2 and 6 at the end of the academic year.

The intended long term impact is that children who are scoring 35 marks or more on the end of key stage 2 assessment papers, will therefore increase their chances of achieving age related expectations in the Maths SATs assessments.

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TIMES TABLES

The Times Table programme of study at Hawkesley Church Primary Academy ensures that children have a fluent recall of multiplication and division tables.

Why are Times Tables important?

- Times Tables are an essential prerequisite to success in solving multiplication and division questions and applying their knowledge to a variety of problems.
- Times Tables are important and are essential within arithmetic knowledge
- Fluent success in Times Tables is essential for future success in all areas of Mathematics.

HOW?

- Long term planning outlines the Times Tables which are taught across the year groups
- Specific Times Tables lessons will be taught a minimum of three times a week, teachers will prioritise Times Tables in arithmetic starters and recap
- Teachers can choose the way in which they teach Times Tables for these sessions which are suitable for their class, this may be through the use of Times Table Rock Stars, online games, songs etc
- Children will complete daily the Bronze/Silver/Gold challenge, with a weekly test that will show progress
- Teachers will send Times Tables homework weekly – as part of the Bronze/Silver/Gold challenge
- Teachers will use opportunities throughout the day (eg at the end of the day, lunch times etc) to reinforce Times Tables facts outside of the main Maths lesson
- Teachers will revisit taught facts to continually reinforce knowledge
- At the end of the half term, children will complete a multiplication and division assessment which will inform teachers of gaps in learning and inform planning to close the gaps
- All children will have a log in for Times Tables Rockstars which allows access at home
- Teachers can decide how to reward their individual classes for attainment and progress through the use of stickers or certificates etc

IMPACT

The impact of the implementation of effective Times Tables teaching will be identified through half termly times table tests for the specific Times Table focus (outlined in long term planning), this will then be analysed so that gaps can be closed through targeted teaching.

Year 4 will complete the National Multiplication Times Table check with the intention that they are all at age related expectation. Those who are not, will then receive further interventions to close the gaps.

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REASONING AND PROBLEM SOLVING

Reasoning and problem solving build upon the skills learnt through times tables, arithmetic and the fluency of essential number skills to give children an opportunity to show an understanding of how to apply these skills in given contexts, often to real world situations. The programme of study at Hawkesley Church Primary Academy will draw together various elements of prior learning to connect different areas of mathematics at a time.

HOW?

- Long term planning produced by the Maths Coordinator outlines the yearly overview ensuring that there is breadth in the areas of Mathematics that are covered. This planning has been adapted from White Rose and also builds in times table teaching.
- Teachers take the National Curriculum objectives to sequence their lessons, building upon previous skills and knowledge.
- Teachers are to use the White Rose planning tools to assist in their planning and teaching, they will be required to teach explicit application and problem solving skills.
- White Rose have a range of reasoning style questions which can be used, however these are not to be the sole resource and should be adapted as required: teachers are to use one of these examples to teach, one for the children to then practice, followed by one (or more) for an independent task.
- Other resources include the Busy Ants textbooks, Collins textbooks, I See Reasoning, Talk it Solve it, NCETM Mastery documents, Arithmekit and any other resources that teachers feel are appropriate to their children's learning.
- Gaps in learning will be identified through continual teacher assessment as well as termly NFER assessments or practice SATS papers (Year 2 and 6) and analysis of these tests will inform future planning.
- Decisions about when to progress should always be based on the security of a pupils' understanding and their readiness to progress to the next stage. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on and applying the concepts
- Children who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content

IMPACT

Children are able to apply their reasoning skills to a range of problems, becoming resilient learners in order to show complex mathematical reasoning and problem solving as they draw upon all of their Mathematical knowledge. At the end of each year, children should be performing at age related expectation and be mathematically ready for the next stage in their learning as they progress into the following year. Assessment data will show attainment levels, this will be through Key Stage 1 and Key Stage 2 SATs and NFER assessments for Years 1, 3, 4 and 5. Analysis of these assessments will ensure that the next stage of their learning can be planned for accordingly.