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## Maths Policy

**October June 26**

*Review date: June 27*

Our pledge is for every member of our school family to ‘gain a heart of wisdom’ every day. We aim to live wisely as we **Amaze** with our knowledge, zest for learning and kindness to ourselves and others. We aim to live well as we **Achieve** our full potential in a happy, caring and fully inclusive environment based on the core values of Christianity. We use our wisdom and hearts to



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**Aspire** to reach great heights as we take flight on our individual journey of endless possibilities.

‘Gain a heart of wisdom’ Psalm 90 v 12

**Amaze. Achieve. Aspire**

Our school curriculum for mathematics is rooted in our vision to ‘gain a heart of wisdom’ every day. Through the teaching and learning of maths, we empower children to Amaze with their curiosity, problem-solving skills, and deepening understanding of the world around them. We nurture a zest for learning by encouraging exploration, resilience, and creativity in mathematical thinking. As pupils Achieve their full potential, they grow in confidence and independence within a caring, inclusive environment that reflects our Christian values. Maths becomes a tool not only for academic success but for wise living—helping children make thoughtful decisions, recognise patterns in life, and appreciate the beauty of logic and order. With wisdom in their hearts, our learners Aspire to reach great heights, using their mathematical journeys as a launchpad for endless possibilities.

## **Mathematics Policy**

### **Harworth Church of England Academy**

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most



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intriguing problems. It 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. (National Curriculum 2014). At Harworth Church of England Academy, we aim to help all pupils to reach their full potential in mathematics by increasing their knowledge and understanding so that pupils learn to understand and apply their knowledge to solve real life problems.

### **Aims and objectives:**

- to meet the statutory requirements of the New National Curriculum 2014
- to develop positive attitudes towards mathematics and life- long learning
- to embed a consistent approach to the teaching of mathematics
- to develop competence and confidence in mathematical knowledge, concepts and skills
- to develop the ability to think logically and solve problems
- use the 'language' of maths
- to develop the ability to use and apply mathematics across the curriculum and in real life To stimulate interest in the subject, to be aware of the fascination of mathematics and to encourage the study of it for its own sake.



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- to 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.
- to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down.
- to give pupils the attitude, skills and adaptability needed to apply their mathematics in situations across the curriculum and in their everyday lives.

## Teaching and learning:

At Harworth Academy, we aim to use a variety of teaching and learning approaches to engage, motivate and inspire the children's progression in mathematics.

## The National Curriculum

We follow the National Curriculum objectives (2014) for each year group which is supported by using Big Mayjs and teacher made materials. This provides flexibility, which allows teachers to be creative and develop professionally. This is supported by the Big Maths Assessment Tracker and our end of year



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SAT's/Optional SAT's which are each directly linked to National Curriculum objectives

## Big Maths

In order to support the teaching of number and arithmetic skills, we follow the Big Maths scheme which is a daily sequential programme of mental maths provision with a strong emphasis on learned facts and developing mental agility. It develops core skills in one clear method. All taught in the same way, repeatedly, to embed these fundamental skills.

Key features of Big Maths:

- clear progression from year to year
- universal methods taught across the school
- provides a common mathematical language
- objectives are clearly matched to the curriculum
- clear links to assessment so evidence can be gathered easily to inform planning and assessment
- improves mental maths and general number skills which can be applied to all areas of the curriculum
- a clear progression of skills outside of calculation covered through SAFE



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## • Teaching Strategies

Direct teaching of class, groups or individuals is planned as appropriate using a range of interactive and practical approaches suited to a variety of learning styles. When working with the whole class, we use an interactive approach wherever possible.

Each mathematics lesson consists of a mental or oral work introduction following the Big Maths CLIC format followed by the main part of the lesson, group/individual activities and plenary. A balance of practical, investigative, oral and written activities is used throughout the school. Children are given opportunities for investigative work and problem solving, at all ages and levels, to develop their ability to apply their mathematical skills to real life situations. Time is given for children to develop their mathematical reasoning skills outside of the current unit of work. A cross-curricular approach is used to provide first-hand experience wherever appropriate. Links with other subjects will be made at the planning stage to ensure opportunities for the integration of maths into other subjects such as: D&T, science, music, geography and P.E. The children develop their mathematical language through opportunities to question and explain their methods and in discussion with the teacher, support staff and each other.

As a school, we have common high expectations and standards regarding both presentation and methodology in order to provide consistency and continuity. Children's recordings are encouraged to be neat and of a high standard presented in a clear and organised way and in a variety of forms e.g. diagrammatically, graphically, pictorially, as a model or in written form.



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## Maths and ICT

Mathematics is taught through ICT where it is appropriate and where the use of ICT enhances the teaching and learning. ICT is used as a whole-class, through the interactive white board, in groups on Ipads and laptops or to support independent learning.

## Resources

As well as having access to a vast amount of ICT, there is a wide range of resources in classrooms and in the resource cupboards to support an interactive and practical approach to mathematics. Staff also have access to the Big Maths Online portal which allows them to plan and deliver lessons in line with the Big Maths framework as well as ensuring appropriate levels of challenge for all including developing mastery for HA pupils. We also use activities from Nrich regularly to immerse the children in the different maths topics applying their skills in different ways. In addition to this staff and pupils have access to TT Rockstars and Numbots allowing for focussed practise of multiplication skills necessary for successful calculation.

## Contribution of mathematics to teaching in other curriculum areas

### English

The teaching of mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage pupils to read and interpret



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problems in order to identify the mathematics involved. The pupils are also given the opportunity to improve their command of English when they explain and present their work to others during plenary sessions. Maths can contribute in English lessons too: younger children enjoy stories and rhyme that rely on counting and sequencing while older children encounter mathematical vocabulary, graphs and charts when reading nonfiction texts.

## Science

During science lessons, pupils are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Pupils are also able to use a wide range of measuring devices in a real-life context. Pupils are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments. They are able to apply their knowledge of negative numbers when reading thermometers.

## Information and communication technology (ICT)

ICT is an integral part of our numeracy lessons at Harworth Church of England Academy. The Clevertouch interactive board is used to visually/auditory stimulate pupils' learning. Information and communication technology enhances the teaching of mathematics significantly because it also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively so that children understand concepts more quickly.



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Each class has a set of tablets available so that groups of children can work independently within the classroom on programs relating to the mathematical objectives being addressed that lesson. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results.

### **Personal, social and health education (PSHE)**

Mathematics contributes to the teaching of PSHE. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their mathematics work; e.g. on the spending of money (Lifesavers Project).

### **Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they can work together and we give them the chance to discuss their ideas and results.

### **Long Term Planning**

The New National Curriculum 2014 provides the long term planning for mathematics taught in the school. Teachers plan which objectives (informed by Big Maths) they cover progressively across the year onto the whole school long term planning grid. Throughout the year, there are whole school themes e.g



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time week. This is to encourage pupils to meet their objectives and receive a watch. We will also have other weeks (Fractions, statistics, shape etc)

## Medium Term Planning

We have a unified medium term planning format which is used throughout the school from Y1 to Y6. It is used to plan short units of work that last 4-7 weeks. The planning is flexible and allows teachers to be creative and meet the needs of the pupils. Each year group's yearly plan is available separately showing the progression of unit throughout the year.

Medium term planning outlines:

- the learning objectives taken directly from Big Maths (National Curriculum linked)
- which CLIC skills will be focused on

## Short Term planning

Children are grouped prior to the start of each unit through their past learning in this area, short pre learning activities may also be used as may their results from the Big maths challenges. These short assessments allow for the dynamic grouping of children meaning that every lesson is targeted to the learning needs of the group and the individual.

Class teachers select the objectives to be taught each week and how they will be taught. Teachers use their own judgement as to the order of delivery and timing may be flexible in response to learning.

Short term planning must include:

- CLIC



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- Wider maths
- Practical activities
- Reasoning opportunities
- Assessment
- Regular arithmetic tests
- CLIC and SAFE tests

Planning and progress is regularly monitored by the mathematics subject leader, the senior leadership team and the head teacher.

Whole school and/or cohort issues raised during monitoring and SATs analysis inform the selection of objectives to be prioritised. Teacher highlights these specific objectives at the initial planning stage to ensure that school priorities are addressed.

## Foundation

We teach maths in the foundation stage as an integral part of the school's work. For these children provision is made for the ELG mathematics strand objectives. These are linked with the year 1 objectives from The New National Curriculum 2014 where appropriate.

## Key Stage 1



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In KS1 there is a daily mathematics lesson of between 45 and 60 minutes for all children.

## Key Stage 2

In KS2 there is a daily mathematics lesson of approximately 60 minutes for all children in ability sets or mixed ability class groups as appropriate per year group.

## Assessment:

### Short term

Children's classwork is assessed frequently through regular marking, analysing children's errors, questioning and discussion. AFL is used through the Big Maths progress drives and instant adjustments are made within the lessons.

Children's work is marked and feedback is given with next steps in line with the marking and feedback policy. Entry Tickets are used at the beginning of each unit to assist with grouping and give a starting point for teacher assessment.

### Medium Term

Each term pupils in each class are assessed against the Big Maths tracking system, plus any other assessment a teacher chooses to do.

### Long Term

Long--term assessments are made against Age Related Expectations.

The following tests are also carried out annually:

- SATs at the end of Y2 and Y6



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- Optional SAT's in each year group.

The results of these are recorded on an end of year assessment tracker and targets are set for the following year. The children are assessed in the early years using the Foundation Stage Profile.

## Homework

Homework is monitored by class teachers. Provision is put in place for children who do not have access to the internet at home. Alongside this pupils are set weekly multiplication practise through TT Rockstars.

## Maths and inclusion

At our school we teach Maths to all children, whatever their ability and individual needs. Maths forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our maths teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all responsible steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors- classroom organisation, teaching materials, teaching style, differentiation- so that we can take additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum



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allows us to consider each child's attainment and progress against year group expectations. This ensures that our teaching is matched to the child's needs.

### Teachers provide help by using:

- visual and written materials in different formats
- small group support where appropriate
- ICT, other technological aids and audio materials
- alternative communication, such as signs and symbols



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## Mastery in mathematics

Pupils within Year groups identify as being gifted and talented are extended to the skills of mastery within their year group expectation. Rich activities are used across year groups to assist teachers in designing appropriate mastery activities for each area of mathematics ensuring pupils have the depth of learning required. Mastery is also provided through the Big Maths Online portal where a range of activities allow pupils to extend their learning beyond the national expectation.

## Stretch and Challenge within Mathematics

It is expected that **all** pupils are to be suitably challenged within Mathematics. Through the use of at least 3 different levels of challenge children should be given the opportunity to regularly choose the level that is most suitable for them to achieve. Ensuring challenge is high enough is both the responsibility of the staff and the pupils themselves who identify their own needs and their own areas of strength.

High achieving children should be challenged in a variety of ways. Examples of challenge for high achieving pupils may be: open learning challenges where a variety of answers are possible; allowing pupils to be the teacher to younger children; and justification of mathematical concepts in their own words.

## Reports to Parents

Consultation meetings with parents take place in the Autumn and Summer terms. A written report is sent out at the end of each academic year outlining



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the curriculum areas covered over the year and the progress made by the pupils. An additional appointment can be made for all parents wishing to discuss the reports' content further. During the year, it is encouraged, through good practice, to promote dialogue between parents and teachers through either written or verbal exchanges.

We encourage parents and carers to support their children's maths learning at home by encouraging them to:

- Talk about and involve their children in everyday maths, such as telling the time, money, shapes and measures.
- Help with the learning of number bonds and multiplication tables. □ Support the school in the use of the methods of calculation it teaches; these can be found in the maths booklet for parents handed out at Parents' Evenings.
- Monitor, and assist with as required, the maths homework they are given.
- Maintain an interest in the child's individual targets in maths.

Parents and carers are always welcome to speak to their child's class teacher (in the first instance) or the Head teacher about any aspect of maths provision in school.

## Monitoring and review

Monitoring of the standards of children's work and the quality of teaching in Maths is the responsibility of the subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about



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current developments in the subject, and providing a strategic lead and direction for Maths in the school. The subject leader gives the head teacher and senior leadership team feedback, evaluating the strengths and weaknesses in the subject, and indicating areas for further development and improvement. Time is allocated in which to review samples of children's work and to undertake lesson observations of Maths teaching across the school. There is a named governor responsible for numeracy who meets with the subject leader in order to review progress.

This policy will be reviewed every 3 years.