

Archbishop Hutton's V.C. Primary School

Mathematics Policy



For God and sound learning

Archbishop Hutton's C.o.E. (V.C.) Primary School

Mathematics Policy

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Next Review: September 2019

Signed: _____ M. Jackson (Chair of Governors, Mrs. M. Jackson)

Date: 11/10/18

Signed: _____ S. Watson (Headteacher, Miss. S. Watson)

Date: 11/10/18

Mission Statement

**“This school welcomes everyone, whatever your background,
so that you can achieve your God-given potential.”**

At Archbishop Hutton's Primary School we aim to develop our pupils' ability to think and solve problems mathematically by using the appropriate skills, concepts and knowledge.

We aim for each child to:

1. Become fluent in the fundamentals of mathematics
2. Develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
3. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
4. Solve problems by applying their mathematics to a variety of routine and non-routine problems, including breaking down problems into a series of simpler steps and persevering in seeking solutions
5. Have a positive attitude towards mathematics
6. Have self-confidence in their ability to deal with mathematics
7. Experience a sense of achievement regardless of age or ability
8. Have a sense of enjoyment and curiosity about the subject
9. Apply previously acquired concepts, skills, knowledge and understanding to new situations both in and out of school
10. Understand and appreciate pattern and relationship in mathematics
11. Communicate clearly and fluently, using the appropriate mathematical language
12. Have equality of opportunity regardless of race, gender, or ability

Teaching Time

To provide adequate time for developing mathematical skills each class teacher will usually provide a daily mathematics lesson. This may vary in length but will usually last for about 45 minutes in Key Stage 1 and 50 to 60 minutes in Key Stage 2. Links will also be made to mathematics within other subjects so pupils can develop and apply their mathematical skills.

Class Organisation

From Year 1 all pupils will usually have a dedicated daily mathematics lesson. Within these lessons there will be a good balance between whole-class work, group teaching, individual practice and problem solving.

A typical lesson

A typical 45 to 60 minute lesson in Year 1 to 6 will usually be structured like this:

- Oral work and mental calculation (about 5 to 10 minutes)
This will involve whole-class work to rehearse, sharpen and develop mental and oral skills
- The main teaching activity (about 30 to 40 minutes)
This will include both teaching input and pupil activities with a balance between whole class, grouped, paired and individual work
- A plenary (about 10 minutes)
This will involve work with the whole class to sort out misconceptions, identify progress, to summarise key facts and ideas and what to remember, to make links to other work and to discuss next steps.

Planning

To ensure continuity teachers will follow the Lancashire Planning for Curriculum 2014. Teachers will have access to a planning disc for each term, which includes resources and a structured approach to ensure that all areas are covered fully. Teachers will consider the appropriate success criteria for learning intentions and display these to the children in lessons.

When planning for Mathematics, teachers:

- Identify the appropriate learning strategies required for their class
- Provide balance, progression and variety within the classroom for content, organisation and learning opportunities
- Assess and plan for the specific needs of children within their class, including children with additional learning needs such as more able/ gifted learners and less able learners
- Give opportunities through speaking and listening to discuss ideas and methods develop correct use of vocabulary

- Ensure that children are given opportunities to meet the requirements of Mathematics across the whole curriculum
- Ensure that children are shown how information technology can be applied in their mathematics work and are given opportunities to explore these possibilities

Teaching in the Early Years Foundation Stage will follow the guidance for Mathematical Development from the Early Years and Foundation Stage (EYFS), ensuring that the children are working towards achieving the Early Learning Goals for Number and Shape, Space & Measures.

Calculations

Children should be given opportunities to use a range of methods of calculating including mental working out, informal jottings, pencil and paper and formal written calculations. We will use a consistent approach to recording written calculations for all four operations. This is set out in our calculations policy, which is accessible to all staff working in classrooms. Children will not be expected to move to the next stage unless they are confident and secure in their present practice and understand the mathematics being used. When discussing calculations, correct vocabulary and terminology should be used to avoid misconceptions.

Recording

Wherever possible the recording of work for mathematics will be held in an exercise book designated for mathematical skills. In Key Stage One these are 2cm squared, moving onto 1cm squared when ready. In Key Stage Two these books should be 1 cm squared moving to 7 mm squares by Year 5. All children are encouraged to work tidily and neatly when recording work. When recording, one square should be used for each digit or symbol. Other work may be on worksheets, which should be stuck neatly into books to show the progression. Other evidence may be photographic – this may be in an individual's book or in a class portfolio.

Marking

Children themselves can mark exercises which involve routine practice with support and guidance from the teacher. Where appropriate children in Year 5 and 6 are encouraged to check computational exercises with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct errors. This can also develop confidence for children as they can see their success more readily.

The quality of marking is crucial; children need an indication of where the error occurred, together with an explanation of what went wrong and how it can be rectified. Where possible information should be given to children through conversation enabling them to ask questions. Teachers use their professional judgement to quality mark children's mathematical learning with next steps, scaffolded examples when this is appropriate to move the child's learning on. Children should be given frequent and regular opportunities to respond to marking.

All marking should follow the school's Marking and Feedback Policy.

No Nonsense Number Facts

In addition to daily maths lessons, children will also participate in No Nonsense Number Facts each day. These sessions will last between 15 and 30 minutes, depending on the age of the children and the topic being taught.

No Nonsense Number Facts has been devised to provide teachers with a coherent progression for supporting fluency underpinned by reasoning. This is in line with both the aims of the National Curriculum and the teaching for mastery agenda, and the approach reflects recent research into how children learn mathematics.

These aims of the national curriculum require pupils of all ages to make and justify decisions in all areas of mathematics. No Nonsense Number Facts has been written in response to these aims, with a clear focus on making and justifying decisions related to number facts.

Teachers will follow planning as specified in the appropriate year group of No Nonsense Number Facts.

Links between mathematics and other subjects

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts. There should be times when Maths is the main focus of cross-curricular activities.

Computing

Computers and iPads will be used in various ways to support teaching and motivate children's learning. Teachers will use links from the planning support disc to model and display images appropriate to the learning intentions. This will only be used in a daily mathematics lesson when it is the most efficient and effective way of meeting the needs of the children in being successful.

Monitoring

Monitoring activities will be completed on a regular cycle following the termly monitoring and evaluation plan by the subject leader and the leadership team.

Home Learning

In line with the school's policy we are committed to developing a wide range of mathematics skills. Children are asked to practise facts at home using short and focused tasks but should not find these over-challenging or too difficult to do. The emphasis for home learning should be on basic skills and learning facts.

The classroom learning environment and working walls

It is essential that the classroom environment is bright, engaging and supports children's learning. From Reception to Year 6, teachers must ensure that their classroom is set up in a way that supports children in mathematics activities. Good-quality, bright, child-friendly prompts should be visible throughout the classroom and other working areas. The aim of these prompts

is to encourage children to become more confident and independent learners and it is essential that they reflect the range of abilities within the class. Teachers should take particular care to use colours and prompts that will support visual learners.

All classrooms have a mathematical working wall, this is an up-to-date display that supports the children's independent activities and encourages them in their discussions and thinking through appropriate prompts and information. Working walls are not intended to be a tidy display of finished work, they reflect the current unit of teaching. Children must be allowed to make contributions to the walls.

Maths working wall to include:

- ✓ Three A4 whiteboards with 1) At the moment we are learning about..... 2) What we already know that will help us..... 3) New learning..... These will change for each unit, whiteboards will make it easier to keep up to date.
- ✓ Flipchart sheet with process /success criteria used during lesson.
- ✓ Open ended question prompts and sentence starters that are relevant to any maths unit
Key vocabulary relating to current unit
- ✓ Key facts relating to current unit
- ✓ Visual images
- ✓ WAGOLL
- ✓ Examples of mistakes we can learn from
- ✓ Reminder every classroom to have RUCSAC strategy always displayed beside Maths working wall

Assessment & Record keeping

Assessment and record keeping in mathematics is consistent with the schools assessment, reporting and recording policy and promotes continuity and progression within the children's learning.

Assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment. Teaching a unit of work will need careful initial and ongoing planning, informed by an assessment of children's learning. A cycle that supports this process in the Primary Framework for mathematics is set out below.

Assess–plan–teach–practise–apply–review

Short-term assessments will be an informal part of every lesson to check understanding and give the teacher information, which will help to adjust day-to-day lesson plans.

Long-term assessments will take place towards the end of the school year to assess and review pupils' progress and attainment. These will be made through compulsory National Curriculum mathematics tests for pupils in Years 2 and 6.

Teachers will also draw upon their class records and tracking to provide assessment information for tracking purposes half termly. Teachers may also use test to confirm learning. Accurate information will then be reported to parents and the child's next teacher.

In accordance with the schools Assessment for Learning Policy children are given opportunities to evaluate and reflect on their own work. Teachers give clear feedback in order for pupils to learn ways in which they can further improve their work.

SEND and Inclusion

In accordance with the school's SEND, inclusion, race and gender policies, teachers ensure that:

- No child is discriminated against in the delivery of Maths.
- Differentiated Maths activities are available in order to support less able children and extend more able children.
- Adequate support is provided for children with identified, additional learning needs, when undertaking Maths activities and will be brought to the attention of the Special Educational Needs Co-coordinator.
- Parents are kept fully informed and are encouraged to support their child's learning within Maths by undertaking agreed home activities.
- Parents will work with the class teacher in evaluating support plan targets for their child and setting new ones. Where appropriate pupils will be involved in the setting of their targets.