

Mathematics Policy

Welsh House Farm Community School and Resource Base



“Inspired to grow and flourish”

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Mathematics at Welsh House Community School strives to adhere to the principles of the maths Curriculum. The purpose of the maths policy is to outline the teaching, organisation and management of mathematics at Welsh House Farm Community School. We aim 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

National Curriculum 2014

At Welsh House Community School we have high expectations for all of our pupils and believe that all pupils can achieve and become confident and skilled mathematicians. We strive for all pupils to be curious about mathematics and to understand the importance of mathematics in their everyday lives.

Since the introduction of the new mathematics Curriculum in 2014, we have adopted a Mastery approach to mathematics.

Aims:

- To develop fluent mathematicians who are able to apply their understanding of mathematics in a wide range of rich and challenging contexts.
- To develop children's reasoning skills to enable children to communicate their understanding using a sophisticated and age appropriate vocabulary.
- To provide a range of learning experiences that inspires a natural curiosity and thirst for understanding mathematics.
- To provide the necessary skills and experiences to enable children to make a positive contribution towards their own life and wider community.

Teaching and Learning Styles

We will achieve these aims through organising a math's curriculum that enables the teaching styles to reflect the needs of individual learning needs. Therefore you will see the following features in the math's curriculum:

- The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by deepening understanding through mastery or individual support and intervention. The questioning and scaffolding individual pupils receive in class as they work through problems will differ and pupils who grasp concepts rapidly are challenged through more demanding problems which deepen their knowledge further.
- Practise and consolidation play a central role to mathematics learning. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.
- Teachers use precise questioning in class to test conceptual and procedural knowledge, and assess pupils regularly to identify those requiring intervention so that all pupils keep up.
- Where appropriate, Teachers use the CPA (concrete, pictorial, abstract) approach to ensure that concepts are modeled to pupils using multiple representations. This ensures that procedural and conceptual understanding is developed simultaneously.
- Teachers will use formative assessment procedures to ensure learning activities challenge all children and reflect their individual needs. Therefore groupings within classes are flexible and pupils will work in different groups dependent on their need.
- The structures of lessons are varied, depending on the needs of the children. Therefore new concepts are often taught in the context of problem solving to ensure children are accustomed to applying their understanding of mathematics in a variety of familiar and unfamiliar contexts.
- Lessons are organised to enable children to work individually and co-operatively to provide opportunities to improve children's mathematical explanations as well as enabling children to develop their own independent skills.
- Children are regularly provided with opportunities to communicate their understanding using age appropriate mathematical vocabulary. This enables the children to develop their mathematical reasoning skills and therefore deepen their understanding of key concepts.
- Opportunities for cross-curricular links are developed to enable children to see the importance of mathematics in every day life. This is best reflected in **Enterprise Week** where by children apply a range of mathematical skills to help understand how to sell a viable, profitable product effectively.

Assessment

At Welsh House Farm Community School, we see assessment as an integral part of teaching and learning, and it is inextricably linked to the mathematics curriculum.

We use three broad overarching forms of assessment: day-to-day in-school formative assessment, in-school summative assessment and nationally standardised summative assessment.

Brief Summary

Summative assessments at Welsh House are:

- NFER Mathematical exams for Year 3, 4 and 5.
- Practise SATs for Year 2 and Year 6.
- Weekly Mental Math tests in KS2.
- Fortnightly Mental Maths Tests in Year 6 as to rotate with short arithmetic tests.

Where tests provide a standardised score/age related score – we correlate that with our on-going assessments (and the terminology used at WHFCS) to provide an accurate assessment of pupils attainment and progress.

Nationally standardised summative assessments include:

- Early Years Foundation Stage (EYFS) profile at the end of Reception
- National Curriculum tests and teacher assessments at the end of Key Stage 1 (year 2) and Key Stage 2 (year 6)

Marking

- Adult's marking relates to the purpose of the lesson/task and makes a clear reference to the lesson objective or success criteria.
- All Work in the Math's books must be marked before the next piece of work is started.
- Pupil 'reflection time' must be carried out regularly to allow pupils to reflect, read and respond to comments made.
- In Foundation Stage, children are given instant feedback during focussed activities, group activities and 1:1 supported activities. The practitioner also discusses next steps for the child to progress further. If written work is completed children are given instant feedback and often supported to complete a gap task to move learning forward. Practitioners will record an observation of the child's progress during the task
- Where possible, in FS, KS1 and with SEN pupils, work will be marked with the child present and individual oral feedback given.

- Pupils will be encouraged to reflect on their work as appropriate, with adult guidance where necessary and with encouragement to gain independence as they mature.
- Targets and comments will be written in appropriate child speak, according to the child's age and ability, reflecting upon the learning objective.

Presentation

At Welsh House Farm we have high expectations of learning behaviour and therefore we expect children to take pride in the work they produce. We realise that presentation is not just about showing pride in your work but is an integral to the children been able to effectively organise and interpret their Mathematical work. Therefore there are a series of non-negotiable requirements to ensure children's presentation facilities their understanding of Mathematics as well as demonstrating their overall pride in their achievements.

Children should:

- Children should use only use pencil unless an assessment states otherwise or they are using the 'purple polishing pen'.
- Children should put the short date on the top Right side of the page.
- Children should put one digit in each square to support the organisation of their work.
- Children should draw a straight line through a mistake and avoid using rubbers.
- Children should always use appropriate apparatus when solving problems involving shape, measurement or data handling.

Roles and Responsibilities

The Governing Body, Head teacher, and Numeracy Coordinator will review this policy at regular intervals with staff. The Numeracy Coordinator, in consultation with the Head teacher, will monitor the effectiveness of the math's provision at Welsh House Community School. This will be achieved through:

- Book trawls
- Learning walks
- Assessment and analysis of data
- Lesson observations
- Monitoring of planning

Numeracy Coordinator

- Is responsible for ensuring mathematics is high focus throughout the school – implementing regular maths assemblies, maths days and maths weeks (Enterprise week, Maths Club and cooking weeks).
- Will carry out analysis of available data to identify progress made and future areas for development.
- Is responsible for ensuring that the policy is implemented and co-ordinating the monitoring of progress.

- Is responsible for monitoring resources, creating bids and purchasing resources.
- Is responsible for the up keep of Maths club ensuring all pupils develop quick mental recall of multiplication and division (12x12) with the help of class teachers.
- Is responsible for organising and implementing Professional Development activities that improve the quality of the teaching of mathematics.
- Is responsible for ensuring the range of interventions has an impact on raising the level of attainment across the school.

Phase Leaders/ Class Teachers

It is every class teacher's responsibility to be aware of and ensure they are following the school mathematics policy. It is also the class teacher's responsibility to ensure support staff are following guidelines set out in Mathematics Policy.

Support Staff (Intervention/TAs)

Support staff who work with children providing intervention programmes and others who work within the classroom must liaise with class teachers to ensure knowledge of planned progress; liaising regularly with key members of staff to discuss progress, barriers, and any additional needs of pupils. The effectiveness of interventions will be monitored by the DHT/HT on a termly basis.

Interventions

Using both formative assessment and summative assessments, teachers will identify any pupils who have not grasped key mathematical concepts or who have misconceptions, resulting in the provision of an intervention programme to ensure that they are ready for the next steps of learning or meeting the requirements of the national curriculum. The Intervention Program will be recorded outlining the progress the child or children have made. As previously mentioned, these will be monitored on a termly basis and form part of the performance cycle.

Curriculum

From Year 1 to Year 6, we follow a structured curriculum program through the provision of long term and medium term plans. KS1 & KS2 **Medium-term planning** documents have been devised to be in line with the Mathematical Curriculum 2014. Medium-term plans (created by Queensmead Primary School) have been adopted by WHFCS as they give details of the main teaching objectives for each ½ term. They ensure an appropriate balance and distribution of work across each term. However this is flexible to the needs of the pupils and therefore if a concept has not been grasped thoroughly by most pupils, there is flexibility to adapt the curriculum map and revisit concepts. In addition, teachers have the flexibility and are encouraged to use a range of resources to support their planning.

Those pupils who grasp concepts more rapidly are given opportunities to deepen their knowledge further and improve their reasoning skills, through rich problems, rather than accelerating on to new curriculum content.

Mathematics is organised into 5 lessons per week. Teachers plan a series of lessons with clearly defined outcomes. However, plans need to be flexible to meet the changing needs of the children. Teachers are encouraged to be adaptable in their approach to planning and organising their learning journey for that week. In KS1 the math's lesson should be 45 minutes long and in KS2 the lesson should be 60 minutes long.

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupils' interests and schemas or current themes and will focus on the expectations from Development Matters / Early Years Outcomes.

As the pupils progress through, more focus is placed on representing their mathematical knowledge through more formal experiences. Pupils will be encouraged to record their mathematical thinking when ready and this will increase throughout the year.

Maths Club

Practise and consolidation play a central role in the teaching of mathematics at Welsh House Farm. Therefore, Maths Club is an essential part of the school maths curriculum for enabling children to become fluent with their understanding of number. Maths Club enables teachers and the Maths co-ordinator to assess the children's knowledge of their times tables by carrying out a club test every $\frac{1}{2}$ term.

- The children only need to achieve it ONCE – which then needs to be recorded in Maths Co-ordinators file.
- Display the children in the math's club they are in (not the one they are aiming for).
- All staff need to ensure practise of multiplication skills (and division skills when ready) takes place every week to support the development of this area.

Some Ideas/Suggestions

- Multiplication songs/rhymes
- Use multiplication CD
- Multiplication bingo
- Follow me multiplication games
- Practise of maths club itself/or give it as homework.
- Create interactive maths area – a range of multiplication games are available.

Structure

- Club A – I can Read, Write, Count and Order my numbers up to 11.
- Club B – I can Read, Write, Count and Order my numbers up to 20.
- Early 11's (doubling)
- Early 22's (simple repeated addition)
- 22 club (repeated addition)
- 33 club (x2, x5, x10)
- 44 club (x2, x3, x4 x5, x10)

- 55 club (x2, x3, x4 x5, x6, x7, x10)
- 66 club (x2, x3, x4 x5, x6, x7, x8, x9 x10)
- 77 club (division facts- inverse operation x2, x3, x4 x5, x6, x7, x8, x9 x10)
- 88 club (mixture of 88 multiplication and division facts)
- 99 club (mixture of 99 multiplication and division facts)
- 111 club (mixture of 111 multiplication and division facts)
- 122 club (mixture of 122 multiplication and division facts)
- 133 club (mixture of 133 multiplication and division facts)
- 144 club (mixture of 144 multiplication and division facts)
- 155 club (mixture of 155 multiplication and division facts)
- Challenge /extension

Cross Curricular and Community links

Generally mathematics will be taught discretely to ensure that links are not tenuous, however where there is a clear link to another subject e.g. data handling within science, mathematics skills should be applied to this subject and used to evidence the pupils' depth of understanding. With a new emphasis on completing scientific investigations the importance of data handling and measuring will take a greater prominence. As part of the school's ethos of developing the children's life skills, the school community is actively involved in an Enterprise Week once a term. The children apply a range of mathematical skills to ensure they can effectively sell a profitable product. Furthermore, where appropriate, teachers are encouraged to make links to the children's mathematical understanding in all foundation subjects. Parental involvement is encouraged through participation in Inspire workshops, Enterprise week, supporting homework and attending parent evenings once term.

Special Educational Needs

All children are encouraged to take part in daily mathematics lessons and mathematical activities where and when are possible. Children are identified as having additional needs through the use of the mathematical Toolkit and referred to the SENCO. This can result in the creation of an IEP that outlines strategies needed to ensure all children can access the math's curriculum effectively. Attainment is also to be monitored using the mathematical Toolkit to ensure progress can be effectively monitored.

Gifted and Talented Children

Teaching staff at W.H.F.C.S do not only provide activities to support children who find maths difficult but also ensure that appropriate challenges are set for children who are high achievers in mathematics. Teachers need to be aware of the School G&T Policy and to ensure they are delivering appropriate provision for identified pupils.

Equal Opportunities:

Mathematics forms part of the School Curriculum Policy to provide a broad and balanced education for all children. Through our teaching of maths, learning opportunities are provided that enable all children to make progress irrespective of gender, cultural and social background and disability.

Health and Safety

Teaching is planned in line with the school's Health and Safety Policy. Also, children are taught to use the equipment in a sensible and safe manner. However, transporting heavy mathematical equipment to classrooms and within them is to be carried out by an adult.

Resources:

There are a range of resources to support the teaching of mathematics within W.H.F.C.S these are constantly being updated. Basic mathematical resources are available in classrooms, such as hundred squares, number lines, whiteboards and counting equipment. Other equipment is stored within year groups and resource rooms.

Relevant Documents

Presentation policy

Marking policy

Assessment policy

SEN policy