Mathematics Policy

Welsh House Farm Community School and Resource Base

"Inspired to grow and flourish"

Approved by:	**Date:** 3/11/22
Last reviewed on:	
Next review due by:	

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 pupils and believe that all pupils can achieve and become confident and skilled mathematicians. We aim to achieve this by developing the children's inquisitive and creative minds through encouraging them to interrogate and investigate mathematical concepts and procedures.

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

Aims:

- To enable children to be competent in mathematical fluency, reasoning and problem solving.
- To encourage children to make explicit connections between mathematical concepts and prior learning enabling them to deepen their understanding.
- Through exploring the use of manipulatives and representations, children will be able to communicate effectively in both verbal, written and pictorial form.
- To provide the necessary skills and experiences to facilitate children to make a positive contribution towards their own life and wider community.
- To enable children to appreciate the importance of mathematics in their everyday lives.

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 the children within our school. Therefore, you will see the following features in the math's curriculum:

- Pupils progress through the curriculum content at the same pace taking 'small steps' to ensure all children have a thorough understanding of the concepts taught. 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.

- Practice and consolidation play a central role to mathematics learning. Carefully designed procedural and conceptual variation within this builds fluency and understanding of underlying mathematical concepts.
- Learning sequences are carefully designed to allow children to revisit, revise and explain mathematical concepts resulting in children making explicit connections between mathematical concepts and prior learning.
- A combination of instruction and dialogue discussions are used by teachers to ensure children can investigate and explore 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.
- 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 everyday life.

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 1, 3, 4 and 5.
- Practise SATs for Year 2 and Year 6.
- End of block assessments

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 pupil's attainment and progress.

Nationally standardised summative assessments include:

- Early Years Foundation Stage (EYFS) profile at the end of Reception
- Year 4 Multiplication Check list
- 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.
- When staff mark, they write a comment and provide a next step or a gap task. Live marking is also encouraged to provide instant feedback.
- 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.
- Development points, gap tasks 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 will be provided with the presentation guidelines within the front cover of their books.

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 Maths Coordinator will review this policy at regular intervals with staff. The Maths 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

Maths Coordinator

- Is responsible for ensuring mathematics is high focus throughout the school- by providing regular professional development, having informal and formal professional dialogues, promoting maths competitions and days, evaluating maths displays, promoting the use of TTrockstars and developing parental links with maths curriculum.
- 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 management of TTrockstars ensuring all pupils develop quick metal recall of multiplication and division (12x12).
- 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 program 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. The type of interventions will vary from 'same day' interventions to those organized over a six-week block. As previously mentioned, these will be monitored on a termly basis and form part of the performance cycle.

Curriculum

From EYFS to Year 6, we follow a structured curriculum program through the provision of long term and medium-term plans. This is an accumulative curriculum to build upon or consolidate prior learning. At Welsh House Farm, we are following the mastery approach to mathematics and therefore the maths curriculum is organized through the implementation of the White Rose Scheme of learning. Teachers are encouraged to follow the scheme of learning to ensure there is a progression of skills in the teaching of mathematics. Children are encouraged to take 'small steps' in mathematics so they have a thorough understanding of the concepts taught. The White Rose Scheme of learning facilitates teachers to plan learning that enables children to experience procedural and conceptual variation to deepen their understanding. 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. Furthermore, Power Maths is an additional resource to help supplement the use of the White Rose Scheme of learning.

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

Mathematics is organised into 5 lessons per week with an additional 5 fluency sessions organised separately to the daily maths lessons. 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. The structure of a maths lesson is organized into distinct parts to encourage children to interrogate and investigate mathematical procedures and concepts. Teachers will organise lessons that begin with an activity that encourages children to revise and revisit mathematical concepts. This will allow

children to make links with their prior learning and consolidate their understanding. Then children are encouraged to investigate and interrogate mathematical concepts while communicating their understanding during the 'Maths talk' part of the lesson. Children will work in mixed ability groups and share their understanding in talk partners, as a small group or part of a whole class discussion. Children will then apply their understanding of the mathematical concepts covered by solving a range of mathematical problems that are presented in a variety of ways. Teachers will support their understanding by encouraging the children to use manipulatives and representations to support their learning or communicate their understanding.

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.

TTrockstars/Numbots

Practice and consolidation play a central role in the teaching of mathematics at Welsh House Farm. Therefore, TTrockstars and Numbots is an essential part of the school maths curriculum for enabling children to become fluent with their understanding of number. TTrockstars enables teachers and the Maths co-ordinator to assess the children's knowledge of their times tables and number.

- The children are encouraged to use the online platform at home and within school in addition to their daily maths sessions.

- In KS2 and KS1 the children's achievements are celebrated by the class teacher providing a certificate for each child when they achieve a particular level. All the children's achievements are celebrated as part of a whole class display. In addition, the maths co-ordinator will use the school's social media platform to share the school's achievements in regard to national competitions and local league tables.
- All staff are to ensure all children have access to this online platform by sharing the relevant information to parents as part of the INSPIRE workshop programme and as part of their home school agreement.
- All staff need to ensure practise of multiplication and division skills take place every week by allocating children to use this online platform on a weekly basis as part of a regular fluency session.

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 an emphasis on completing scientific investigations the importance of data handling and measuring will take a greater prominence. 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, allowing access to online platforms, 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