



Let your light shine - Matthew 5:16

Mathematics Policy

September 2023

Introduction

This policy should be read in conjunction with the following school policies:

- Calculation policy
- Assessment policy
- Marking and feedback policy
- SEND policy
- Equality policy
- EYFS policy

Intent

At Whitley Memorial CofE Primary School, we offer the children a balanced mathematics curriculum based on the National Curriculum aims to ensure that all children become **fluent, reason mathematically** and can **solve problems**. The Whitley aims to allow children to **believe** in themselves and **achieve** as mathematicians and to develop the power of resilience and perseverance when faced with mathematical challenges. We believe that an appreciation of the beauty and power of mathematics and a sense of enjoyment, creativity and curiosity leads the pathway to success. We have a clear, progressive curriculum based on developing a secure and deep conceptual understanding allowing children time to identify patterns and make valuable mathematical connections and generalisations. At the Whitley we foster and promote the fact that, **'We can all do Maths!'** regardless of race, gender or those from disadvantaged backgrounds. We promote an environment that children feel comfortable to try out their ideas and use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems.

Implementation

Our whole curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish to become the very best version of themselves and to hold the belief that they can achieve.

We teach the National Curriculum, supported by a clear skills and knowledge progression. This spiral curriculum ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.

Across the whole school we use a Teaching for Mastery approach. Problem solving is taught throughout lessons. New concepts are shared within the context of an initial related problem, which children discuss with partners or within small groups. This initial problem-solving activity prompts discussion and reasoning, as well as promoting an awareness of maths in relatable real-life contexts that link to other areas of learning. Real objects and/or manipulatives are used to allow children to experience the mathematical concept. Teachers use careful questions to draw out children's discussions and their reasoning. Modelled stem sentences are carefully introduced so children can use these to explain and reason effectively and concisely. The class teacher then leads children through strategies for solving the problem, making careful links to previous lessons and concepts. Independent work provides the means for all children to develop their fluency further, before progressing to more complex related problems. Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. Challenge for all is visible throughout a lesson, where children are asked to reason and prove their understanding at a deeper level. Rich and sophisticated problems (low threshold, high ceiling), as well as exploratory, investigative tasks allows all children to access the same content and reach their full potential.

In addition to a daily maths lesson, using [White Rose](#) as our driver, we have a maths meeting time in the afternoon to develop fluency in Key Instant Recall Facts that are developed progressively from Year 1 for Year 6.

Fluent recall of key facts has been a key focus at the Whitley so children can free up working memory when calculating with confidence. Once concepts are taught children are formally assessed to ensure any gaps or difficulties are addressed and interventions are put in place. The Maths Lead monitors fluency throughout the year and each class assesses fluency each half term.

Expectations at the Whitley include:

- Teachers reinforce an expectation that **all** children are capable of achieving high standards in Mathematics.
- Adopt a Teaching for Mastery approach that develops the 5 big ideas of **fluency, representation and structure, variation, mathematical thinking and coherence**.
- Staff promote children's curiosity and enable them to safely take risks and learn from first hand experience.

- A diagnostic approach is adopted to seek out any barriers to learning and an effective and targeted intervention in addition to the maths lessons devised to close any gaps when necessary.
- Children progress through the curriculum year group content at the same pace unless a specific learning difficulty has been diagnosed and forms part of their EHCP.
- Differentiation is achieved through targeted questioning to deepen understanding and through scaffolding tasks, individual support, intervention and use of manipulatives.
- Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge.
- Carefully designed procedural and conceptual variation within lesson design to develop fluency and understanding of underlying mathematical concepts.
- Use of precise questioning to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so any misconceptions are addressed within the lesson.
- Modelling of stem sentences and encouraging children to answer concisely in full sentences using mathematical language when reasoning.
- Staff to follow the agreed school Calculation Policy and use NCETM Prioritisation materials as their primary resource when planning.

EYFS use the 'Statutory framework for the early years foundation stage'. This sets out the standards that all early years providers must meet to ensure that children learn and develop and are kept healthy and safe. Mathematics is taught through an integrated approach. Mathematics in the EYFS is initially developed through stories, songs, games and imaginative play. The EYFS environment should include visual images, models and resources to stimulate interest both indoors and in the outside learning environment. Mathematics in the EYFS Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in EYFS. The programme of study for the Foundation stage is set out in the EYFS framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems: and to describe shapes, spaces and measures.

Reception use White Rose to plan their daily maths lessons, supplemented by NCETM Mastering Number materials to develop fluency and deep understanding of number.

Impact

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study of the Mathematics National Curriculum.

Throughout a lesson, formative assessment takes place and immediate feedback is given. Assessment is used to influence daily planning to ensure that the needs of each child are met and progress is made.

The teaching of maths is monitored on a half-termly basis through book scrutinies, learning walks, pupil interviews and lesson observations. The Maths Lead is also able to develop the teaching through individualised support to teachers.

The Whitley ensures that the whole of the curriculum is taught by using White Rose as a driver to our curriculum. We use KIRFs mapped out across the year to ensure children's fluency develops to support rapid calculations and reduce load on working memory.



KIRFS YEAR 1 TO 6 OVERVIEW

	Year 1 blue	Year 2 yellow	Year 3 orange	Year 4 purple	Year 5 red	Year 6 green
Autumn 1	I know number bonds for each number to 5	I know number bonds to 20	I know number bonds for each number up to 20	I know number bonds of 100	I can find factor pairs of a number	I can identify common factors of a pair of numbers
Autumn 2	I know number bonds to 10	I know doubles and halves for numbers to 20	I know the 3 times table (\times and $+$)	I know the 6 and 9 times table (\times and $+$)	I can recognise prime numbers up to 20	I can convert between fractions, decimals and %s
Spring 1	I can recognise numbers to 50	I know the 2 times table (\times and $+$)	I know the 4 times table (\times and $+$)	I know the 7 and 11 times table (\times and $+$)	I can recognise equivalent fractions and decimals.	I can find a fraction of an amount
Spring 2	I know halves and doubles to 10	I know the 10 times table (\times and $+$)	I know the 8 times table (\times and $+$)	I know all times tables up to 12×12 (\times and $+$)	I know decimal number bonds to 1 and 10	I can find a percentage of an amount
Summer 1	I know number bonds for each number up to 10	I know the 5 times table (\times and $+$)	I can recall facts about durations of time	I can multiply and divide a single digit by 10 and 100	I can recall metric conversion	
Summer 2	I can tell the time to the nearest half an hour	I can tell the time to the nearest 5 minutes	I can tell the time to the nearest minute	I can recognise simple equivalent fractions	I can recall square numbers to 12 and their square roots	

Children at The Whitley will love maths and will feel confident in the use of number, shape, space, measure and problem solving.

Inclusion and Equal Opportunities

At Whitley Memorial each child is valued as an individual. No one is discriminated against on the grounds of gender, race or religion. Copies of the school's policies on Equal Opportunities and Racial Equality are available in school.

Teachers will aim to include all pupils fully in their daily mathematics lessons through our ordinarily available provision. All children benefit from the emphasis on oral and mental work and watching and listening to other children demonstrating and

explaining their methods. However, where a pupil whose difficulties are severe, complex and they are working well below age related expectations, then they will receive individualised support or adapted resources.

Health and Safety

A risk assessment must be completed if it is thought that an activity may pose a threat to a pupil's health or safety during a particular lesson.

Resources/Display

Resources for the delivery of the maths curriculum are stored both centrally and in classrooms. Everyday basic equipment is kept in classrooms while topic related equipment is stored in shared resource cupboards. A regular audit of resources ensures there are adequate good quality resources available.

Mathematical vocabulary and stem sentences should be displayed so that children use this in the communication of their understanding.

There should be maths work on display in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children

Cross-curricular Links

Mathematics is an interconnected subject and links with other subjects are built into planning when appropriate. There is a strength in the use of maths within science in our school.

Assessment, Recording and Reporting

Assessment for learning should occur throughout the entire maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular and whenever possible verbal feedback should be provided to address any misconceptions promptly. Pupil's work should be marked in line with the Marking Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods. Adopting metacognition and self-regulation approaches are used to support pupils to think about their own learning more explicitly.

Summative assessments are made at least once per half term in order to provide further understanding of the level a child is working at and to inform a more rounded judgement of their abilities. There are end of unit assessments through White Rose that are used.

Tracking is used to ensure that children are making good progress over time and those children who need more support can be identified and targeted for support. What that support will and how intensive, depends upon the child's needs and it may be a simple strategy within whole class teaching that is needed. Where further support is deemed necessary, children can access interventions.

KIRFs (Key Instant Recall Facts) are assessed half termly and recorded on a shared drive to show a cumulative picture of a child's fluency through their journey through school and gaps can be targeted to support children's quick re-call of facts.

It is the responsibility of the class teacher to assess all pupils in their class. Class teachers report to parents each term during Parent/Teacher Consultations and a formal end of year report. Children who require extra support, a discussion with parents and child takes place and targets are set every term.

Monitoring

The Headteacher and Maths Lead are responsible for monitoring progress in mathematics. There is a named governor responsible for Mathematics who is updated regularly and will accompany the Maths Lead on learning walks.

Evaluation

This policy will be reviewed annually by the Mathematics subject leader, in consultation with the staff, and as and when elements of Mathematics are identified or prioritised within the School Development Plan.

Role of the Subject Leader

- Ensure teachers are familiar with the Mathematics curriculum they teach to and help them to plan lessons
- Lead by example in the way they teach in their own classroom
- Prepare, organise and lead CPD, with the support of the Head teacher
- Work with the SENCO and Intervention Co-ordinator
- Observe colleagues with a view to improve provision
- Attend CPD provided by LA mathematics consultants and Maths Hub
- Discuss developments and the provision of Mathematics with the Head teacher and the mathematics governor
- Monitor and evaluate mathematics provision in the school
- Conduct an audit of resources

Consultation has taken place

Staff Date:

Governors Date:

Date Formally Approved by Governors

Date Policy became effective 1st September 2023

Review Date: September 2024

Revised: September 2023

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