
# Mathematics Policy

Reviewed on: April 2020

Review due: April 2022

Signed:

Date:

## Aims and Objectives

At Westdale we value every pupil and the contribution they have to make.

Our maths curriculum intent for mathematics as a core subject is that it should teach children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It should enable children to understand relationships and patterns in both number and shape in their everyday lives.

Our objectives in the teaching and learning of mathematics is to:

- Promote an enjoyment of learning through practical activity, exploration and discussion
- Promote confidence and fluency with numbers and the number system
- Develop the ability to solve problems through decision making and reasoning in a range of contexts
- To develop a deeper understanding of mathematics through a process of enquiry and investigation
- To develop an understanding of the connectivity of patterns and relationships within mathematics
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom and become aware of the uses of mathematics in the wider world
- To develop an ability and confidence to work both alone and co-operatively to solve mathematical problems
- To develop personal qualities such as perseverance, resilience, independent thinking, co-operation and reflection
- To give all children confidence and a sense of achievement and success

## Curriculum Drivers

These drivers are based on the needs of our children and are embedded into every topic and curriculum area. Teachers make provision for our drivers through planning to ensure they are developed coherently throughout the school.

**Creativity:** our maths curriculum positively encourages children to explore and think creatively, thinking outside the box. They are taught to recognise patterns in number, to investigate open-ended questions, learn from mistakes and make valuable links to other subjects.

**Communication:** working with partners, in groups or whole class offers them the chance to develop the correct vocabulary of maths, explain their reasoning and formulate questions for inquiry.

**Celebrating difference:** making cross-curricular links enables the children to see a real purpose for their learning and see how it affects everyday life. Through maths investigation and reasoning activities, they are encouraged to explain their own ideas and findings, which

may differ to that of other children within the class. They learn to value each other's ideas and respect that approaches to solving problems may differ, but all have equal validity.

**Kindness to ourselves and others:** through peer support and group work the children are encouraged to develop positive attitudes, encouraging each other and valuing mistakes as an integral part of developing skills in maths. They use the language of our Learning Powers, recognising the need for positivity, resilience, perseverance and reflection.

## Principles of Teaching and Learning

Our teachers strive to:

- Build children's confidence and self-esteem
- Develop children's independence
- Allow all children to experience success
- Contextualise mathematics
- Use practical approaches to mathematics (models and images)
- Encourage children to select independently resources to help them
- Challenge children of all abilities
- Encourage a lifelong enjoyment of mathematics
- Develop a child's understanding of mathematical language that enables them to reason and discuss their learning with confidence and fluency
- Learn from teachers, peers and their own mistakes
- Allow children to ask questions as well as answer them.

Our children should:

- Have a well-developed sense of the size of a number and where it fits into the number system (place value)
- Know by heart number facts such as number bonds, multiplication facts, doubles and halves
- Use what they know by heart to figure out number problems
- Calculate accurate and efficiently, both mentally and in writing
- Draw on a range of calculation strategies
- Make sense of number problems and identify the operations needed to solve them
- Explain their methods and reasoning using mathematical terms
- Judge whether their answers are reasonable and have strategies for checking them where necessary
- Suggest suitable units for measuring and make sensible estimates of measurements
- Develop spatial awareness and an understanding of the properties of 2D and 3D shapes

The school uses the Maths No Problem scheme to support the teaching and learning in Key Stage 1. This scheme of work is based in the National Curriculum with links to the Singapore system. This curriculum emphasises the consistent use of concrete and pictorial representation to aid conceptual understanding. It concentrates on developing fluency in problem solving skills and mastery. All children work together in the class, with targeted support given to children who need further consolidation or scaffolding. Children who master concepts and learning quickly are given problems to solve in greater depth to challenge and consolidate their understanding and learning.

Each teacher plans for individuals with special needs and children may be given extra support in the classroom, either on a one to one basis or as part of a target group.

Integral to the teaching and learning, is the necessity to undertake quick responses to misconceptions of learning. Learning is checked promptly to identify children who may need quick intervention to address any misconceptions or difficulties. Lessons are adapted and changed whenever necessary depending on the needs of individuals, groups or whole class responses to lesson objectives.

## Supporting long-term memory acquisition

Teachers work together in their year group teams to enable children to develop their long-term memory acquisition, with regular recaps on past learning and by exploring a variety of different teaching techniques. They make clear links between the different areas in maths enabling pupils to apply what they have learnt with confidence and mastery in a variety of situations. At different points in a lesson or a week's sequence of lessons they may add activities or problems that require pupils to apply previous learning from a different part of the maths curriculum, thus offering consolidation and mastery.

## Planning

Planning is supported by Maths No Problem teacher text books which are rooted in the new National Curriculum. We carry out curriculum planning in three phases, long term, medium term and short term. The National Curriculum and Maths No Problem Curriculum gives a detailed outline of what we teach in the long term, with key objectives identified.

Medium term plans give details of the main teaching objectives for each term. They ensure an appropriate balance and distribution of learning across each term.

Weekly planning with specific learning objectives and expected outcomes, give detail of how the lessons may be taught. These are planned in year group teams which ensures continuity.

Each child in Key Stage 1 will have a maths book to record teaching and learning. Activities and teaching build on children's prior learning, developing their skills, knowledge and understanding, incorporating challenge and problem solving opportunities.

More practical based lessons are recorded using 'Pic-collage' and kept in class learning journey folders. These are valuable documents for parents available during the week when they come in to class or during parents evenings. They also offer evidence for monitoring coverage.

## Assessment

Assessment is an integral and continuous part of the teaching and learning at Westdale and much of it is undertaken informally and regularly as part of each teacher's daily reflection and next steps planning. Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria, effective feedback and response in teaching and direct observation of children. Findings from these types of assessment are used to inform future planning.

At key points in the year, all teachers will update assessment on Eazmag to record and track progress and attainment. Assessment is undertaken against the new National Curriculum and the Key Performance Indicators (Unicorn).

## Monitoring and Evaluation

Regular monitoring and evaluation is undertaken by:

- Lesson observations by CLT, with a focus on the teaching and learning
- Looking at maths books and samples of work, by the maths coordinator, year group teams, whole staff and CLT.
- Discussion with staff
- Discussion and feedback from children
- Learning walks by CLT
- Pupil progress meetings, where data, attainment and progress is analysed and discussed with each class teacher
- Moderation activities, between classes, year groups and through participation in local authority moderation (Early Years and end of Key Stage 1)
- Moderation within the locality and with other partner schools.

## Partnership with Parents

Parents are informed of the maths objectives covered each term, which enables them to support at home. Sections on our website offer support and explanation of how maths is taught in school, especially calculation. Parents will be able to look at books and learning journeys during parents evenings held in the Autumn and Spring terms. Parents will also be updated of progress and attainment of their children at regular parents' evenings.

At Westdale we have an open door policy. We encourage parents to raise any questions or concerns with us as soon as possible.

## The role of the Mathematics Co-ordinator

- Keep abreast of all new information through ongoing CPD and research
- Prepare, organise and lead CPD and joint professional development to ensure staff are kept up to date with knowledge and new information
- Have a clear understanding and knowledge of the subject and implications for teaching and learning
- Work with the SENCO and CLT to ensure equality in access and consistency in teaching and learning
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, assessment data analysis and feedback from CLT on learning walks and observations.
- Updates and informs the Headteacher and Link Governor regarding progress and attainment
- Monitors resources and orders appropriate replacements or new equipment when needed
- Lead discussions with children and staff to assess provision and attainment

## Early Years Foundation Stage (EYFS)

We follow the EYFS curriculum guidance for Mathematics using the Development Matters document and assessing at the end of Foundation 2 against the Early Learning Goals. We are committed to ensuring the confident development of number sense in our Early Years Curriculum and put emphasis on mastery of key early concepts. Pupils explore the 'story' of numbers, they use practical equipment to give number context and reason in everyday life problems and understanding. Children are taught and encouraged to share their reasoning and understanding. Children become increasingly familiar and confident in the use of equipment that will then be used in Key Stage 1, providing continuity and progression.

## Mathematics and ICT

ICT enhances the teaching and learning of mathematics significantly and is used by both teachers and children to support the learning. Staff use ICT for planning, recording and assessing and to produce IWB resources that present learning visually, dynamically and interactively so that children can understand concepts quickly. Children use ICT to communicate results, explore concepts and understand with greater depth mathematical learning.

## Cross Curricular Links

Teachers plan around a topic based approach. This planning creates opportunities and links for cross curricular learning, bringing the subject of mathematics alive, giving it context and relevance.

## Equal Opportunities

As an inclusive school all children have access to the mathematics curriculum whatever their race, gender, social, disability, cultural and economic groupings. If children need adaptions to the curriculum we will make all reasonable adjustments.

Policy updated: January 2020 by Nik Hedges – Maths Co-ordinator