



Mathematics Policy

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White Meadows Primary Academy Mathematics Policy

Background and Aims

At White Meadows we recognise the vital need for children to be confident, enquiring mathematicians who develop an enjoyment of the subject and a desire to develop their skills post primary school. Teaching not only seeks to develop fluency and flexibility in children's approaches to using and manipulating number, but also develop higher order thinking and reasoning skills through and deep and challenging problem solving.

As a school we have the following aims for the learning of mathematics for all children:

- Developing fluency and flexibility in all areas of mathematics, making connections between the different content that has been studied.
- Become intuitive, thoughtful and articulate problem solvers.
- Improve communication skills by placing a high emphasis on reasoning.
- Develop enthusiastic, inquisitive and positive attitudes towards the subject, which result in a deep and lasting interest in the subject.

Schemes of Learning and Mastery

White Meadows has adopted the White Rose schemes of learning from Reception to Year 6. This allows teachers to teach key concepts over longer periods of time, with the aim of embedding fundamental understanding before moving on to the next unit of work. In order for pupils to be able to master the taught content, multiple opportunities for reasoning, problem solving and intelligent practice are provided for children to engage with. Development of higher level thinking skills, through deeper, open ended problems will enable rapid-grasping pupils to develop mastery with greater depth.

Multiplication Tables

Having a secure grasp of multiplication (and related division) facts is important for pupils, as it forms the foundations for (among other areas): long and short multiplication and division; working confidently with fractions; calculating percentages and working with area and perimeter. Pupils are taught multiplication tables through concrete, pictorial and abstract methods; rote learning is only one additional way to support these.

Expectations for Recall of Multiplication Facts

Y1: count in multiples of twos, fives and tens. Use concrete and pictorial representations to answer multiplication questions.

Y2: recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.

Y3: In addition to Y2 facts, recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Y4: recall multiplication and division facts for multiplication tables up to 12×12 .

Y5: In addition to Y4, multiply and divide numbers mentally drawing upon known facts.

Y6: See Y5.

White Meadows currently uses TT Rockstars, an online platform, to enthuse pupils about times table teaching and monitor their progress.

Weekly Mathematics Structure

Mathematics is taught in five sessions per week, with each session lasting between one and one-and-a-half hours, depending on the nature of the content taught. Content is decided upon by teachers, dependent on the needs of their children; however, lessons will typically comprise a combination of mental, fluency, reasoning and problem solving activities to fully extend all of the children.

Planning and Teaching

Lesson planning is conducted by class teachers, under the monitoring of year group leaders and SLT. Sequences of lessons should be flexible enough to respond to the needs of the children and annotations should indicate how the lessons have been altered to take this into account.

Delivery of mathematics content takes into account the concrete-pictorial-abstract sequence of understanding mathematical concepts. Resources should be available to support pupils' understanding wherever appropriate, especially in the early stages of development.

Working walls are used in every classroom to support the children's learning. These develop over sequences of lessons and are not intended to be 'pretty' displays. Key vocabulary, images, modelling and pupil explanations are all included to enhance mathematical understanding. Working walls are part of the resource bank in the classroom and help to develop pupils as independent learners.

Marking and Assessment

Children should be involved in the marking of their work wherever possible and feed forward comments are left by teachers in at least three pieces of mathematics work per week. These take the form of reasoning questions, related to the work done in the lesson, and are designed to develop pupils' mathematical communication skills, as well as consolidating their content understanding. Summative assessment of pupil understanding comes at the end of each unit and teachers use PUMA assessments to analyse any gaps in understanding for each child. If they feel necessary, teachers will use practice tests or sample questions more frequently, to both gauge the understanding of children in their class or give them exposure to different forms of questions

Attainment and progress data for mathematics is recorded half-termly on O-Track, the school's data tracking system. In order to have mastered a particular concept pupils are required to show independent application through a range of problems. SAT tests are set for children to take at the end of year two and year six. When the school has the results of these the data is analysed by a combination of the maths lead, year six lead and SLT. Measures will be taken to address any issue that arises as a result.

Presentation

Children must be set high expectations for the presentation of their work and be taught to have pride in their learning. Every piece of work should have a date (in the top left hand corner of the page) and title (in the centre of the second line) which are underlined using a ruler. Learning intentions and success criteria should be cut accurately and stuck in, under that date and title, parallel with the horizontal lines on the page. One digit per square should be used and no digit reversal should go uncorrected. Children should not rub out any errors in their maths books; rather they should put a small 'x' by the calculation or work that they want to correct. This allows the child to make an effort to review their work and self-correct. Presentation issues should be picked up, either verbally or during written marking, but should NOT form the basis of feed forward comments.

Evaluation and Monitoring

High quality mathematics will be maintained through the following monitoring procedures:

- Lesson observations
- Book looks
- Planning monitoring
- Learning walks
- Data analysis

Teachers will be given timely feedback if any actions are required to maintain consistency and quality of learning. Staff development meetings will also be used to disseminate up to date developments in best practice mathematics teaching and the mathematics lead will look for appropriate CPD to help develop staff confidence and competence in the teaching of mathematics.

Equal Opportunities

Mathematics at White Meadows is taught so that all pupils can succeed.

- Our expectations do not limit pupil achievement
- Targets are set with each individual pupil's next steps at the forefront
- Children are challenged and extended to increase their need for independent thinking
- Interventions take into account the level of understanding of the child and help them to develop appropriately

In accordance with curriculum guidelines, pupils who grasp content rapidly are not accelerated through curriculum content. These pupils are given the opportunity to learn and develop higher order thinking skills at pace, through a varied diet of ever more complex problems through which to apply their mathematical understanding.