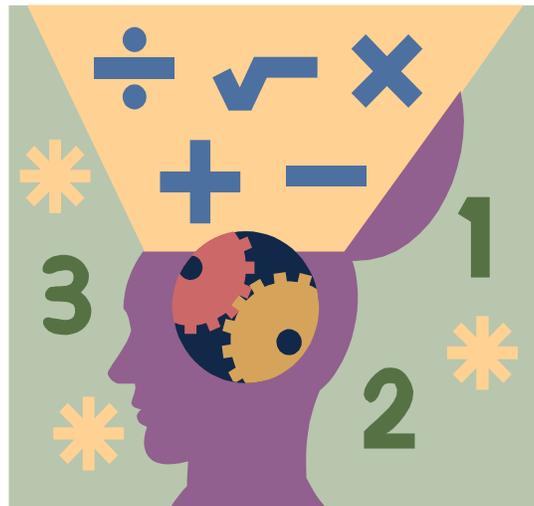


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Westminster Primary School

Mathematics Policy



WESTMINSTER PRIMARY SCHOOL

MATHEMATICS POLICY

Introduction

This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics curriculum. The mathematics taught and the methods used reflect the recommendations outlined in the DfE guidance contained in the documents:

- (A) Curriculum Guidance for the Foundation Stage
- (B) Framework for Teaching Mathematics from Reception to Year 6
- (C) Renewed Framework for Literacy and Mathematics
- (D) Early Years Foundation Stage Guidance

It provides information and guidance for teachers, governors and other interested persons.

Aims

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At Westminster Primary School we aim to:

1. develop our 'high quality, high expectation' ethos across all mathematical areas.
2. develop a positive attitude to maths as an interesting subject and an awareness of the fascination of mathematics as a subject in which all children gain success and pleasure;
3. develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
4. encourage the effective use of maths as a tool in a wide range of activities within school and, subsequently, adult life;
5. develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary (as detailed in DfE 'mathematical vocabulary');
6. develop the ability to solve problems by thinking clearly and logically with independence of thought and creativity of mind;
7. develop an appreciation of creative aspects of maths and awareness of its aesthetic appeal;

8. develop mathematical skills and knowledge and quick recall of basic facts in line with NNS recommendations.

Teaching and Learning Styles

The school uses a variety of teaching styles to cater for the variety of learning styles of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Mathematical dictionaries are available in all classrooms. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. The school's use of the 'block' and 'unit' approach to planning as outlined in the Renewed Framework (2007) ensures that Using and Applying mathematics is integrated into planning and teaching.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work, and in other lessons by organising the children to work in pairs on open-ended problems or games.

We use teaching assistants to provide appropriate support to individuals or to groups of pupils. Teaching assistants are an important asset to our school and, as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding is constantly updated through involvement in school-based training.

Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum, and we use the Renewed Framework for Mathematics as the basis for implementing the statutory requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics in line with the structures and recommendations outlined in the Renewed Framework for Mathematics. Our weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

The headteacher and mathematics subject leader are responsible for monitoring the mathematics planning within our school.

Assessment

Assessment has two main purposes:

- assessment of learning (also known as summative assessment);
- assessment for learning (also known as formative assessment).

Assessment of learning (AoL) – summative assessment

Assessment of learning is any assessment that summarises where learners are at a given point in time – it provides a snapshot of what has been learned. Within Westminster Primary School AoL is used appropriately, e.g. to provide a Teacher Assessment level and grade at the end of KS1.

Assessment for learning (AfL) – formative assessment

“Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to get to and how best to get there.”

Assessment Reform Group, 2002

We recognise that AfL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AfL depends crucially on actually using the information gained.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during ‘day-to-day’ teaching. These ‘immediate’ responses are mainly verbal and are not normally recorded;
- Using knowledge of pupils drawn from ongoing pupil tracking records and from the ‘prior learning’ section at the beginning of each unit of work within the Renewed Framework to guide our planning and teaching;
- Adjusting planning and teaching within units in response to pupils’ performance;
- Use of the ‘assessment for learning’ questions within the Renewed Framework to check learning against objectives at the end of each unit of work. If necessary future planning is adapted in response to assessment outcomes;
- Use of information gained from statutory and optional tests. Analysis is done at both a quantitative and qualitative level. Information gained is used to targets to determine which strategies or methods are particularly effective in respect of specific areas of mathematics.

The Foundation Stage

Work undertaken within the Early Years Foundation Stage is guided by the requirements and recommendations set out in the Early Years Foundation Stage document.

We give all the children ample opportunity to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about mathematics.

Contribution in Mathematics to Teaching in Other Curriculum Areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. This is recognised within the Renewed Framework for Mathematics where speaking and listening objectives are suggested for each block within each year group. For example, there are opportunities for pupils to 'use a range of oral techniques to present a persuasive argument' offered in Year 6, Block B.

The information contained in the Renewed Framework is used to guide our planning, particularly in respect of speaking and listening.

ICT

The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics;
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it;
- Useful suggestions as to integrating ICT into units of work is given in the planning section of the Renewed Framework.

Science

Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs.

Art, Design and Technology

Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared a great deal of measurement occurs, including working out times and calculating cost.

History, Geography and Religious Education

In history and geography children will collect data by counting and measuring and make use of measurements of many kinds. For example, the study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio.

Physical Education and Music

Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Personal, Social and Health Education (PSHE) and Citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views.

Teaching Mathematics to Children with Special Needs

At Westminster Primary School we aim to provide a broad and balanced education to all pupils. We also recognise, and aim to make provision for, pupils who have a particular ability in mathematics. Mathematical activities are differentiated when appropriate.

Resources

There is a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate small apparatus. Mathematical dictionaries are available in all classrooms. Our lessons are driven by the Renewed Framework objectives and are supplemented by a range of resources, such as Abacus, Maths on Target and Scholastic.

Responses to Children's Work

We recognise the importance of responding to children's work, whether orally or in writing. We seek to encourage children by highlighting positive achievements. Children are given opportunities, and actively encouraged, to explain their work to others and to display their work when appropriate. They are encouraged to value and respect the work of others.

Monitoring and Review

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the subject leader, headteacher and link governor. Children's work is monitored via book trawls, lesson observations, pupil conferencing and pupil progress meetings. Work is also moderated across the school by using APP (Assessing Pupil Progress) across the mathematics strands.

The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.