

Purpose

The purpose of this policy document is:

- to set out our school's agreed approach to the mathematics curriculum – the intent and practice for the teaching and learning of mathematics within our school
- to ensure that everyone involved in the teaching of maths has a clear understanding of the agreed policy in order to provide consistency across the school
- to inform other stakeholders, eg. the governing body.

The Importance of Mathematics

Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills and the ability to think in abstract ways (National Curriculum Orders, 2000).

Mathematics provides a powerful universal language and intellectual toolkit for abstraction, generalisation and synthesis. It is the language of science and technology. It enables us to probe the natural universe and to develop new technologies that have helped us control and master our environment, and change societal expectations and standards of living. Mathematical skills are highly valued and sought after. Mathematical training disciplines the mind, develops logical and critical reasoning and develops analytical and problem-solving skills to a high degree (Smith 2004, Making Mathematics Count).

Aims

At Nunnery Wood Primary School the aims of mathematics are to:

- promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- develop every individual's potential in mathematics by becoming independent, confident and logical thinkers with flexibility of mind
- develop a thorough knowledge and understanding of the numbers and the number system
- develop the importance of using mathematical language as a means of communicating ideas and concepts
- develop efficient mental methods accompanied by quick recall of basic facts ('Mental Methods Matter Most')
- develop efficient written methods, to be used only when a mental method is inefficient or impractical
- develop the ability to solve problems and puzzles through decision-making and reasoning in a range of contexts
- develop an understanding of the importance of mathematical skills in every day life.

Curriculum Planning

The long term objectives for each year group are stated in the new National Curriculum (2014) and are used as the basis for implementing the statutory requirements for mathematics. Our medium-term plans give details of the main teaching objectives for each term and they define what we teach. They ensure an appropriate balance and distribution of work across each term.

The teaching and learning cycle of review, teach, practise, apply and evaluate underpins short term planning. Teachers work together in teams during weekly PPA sessions to create each sequence of learning. A clear learning objective (WALHT) and success criteria

(Remember tos /RTs) for each lesson are recorded using the school's proforma, together with key vocabulary, key questions, assessment opportunities, target work and possible activities created for all children to meet the specific objectives. Teachers later add annotations to their plans regarding children's progress which informs future planning. All mathematics planning is filed in classroom curriculum planning folders, and is monitored by members of the Senior Leadership Team throughout the year.

The major focus during each term is on number work, with other areas of maths, such as shape and space, covered in special weeks and days throughout the course of the year. Maths is also incorporated into each team's theme work, wherever appropriate.

Teaching and Learning

Children are taught maths in their own classes where there is a wide range of achievement levels. In order to provide suitable learning opportunities for all children, a range of different groupings are used in every class. Children may be taught in whole class groups on occasions, but more usually they will work in small groups, with a partner (a Learning Partner or a maths partner) or independently. Teachers plan weekly in PPA sessions, and then further refine plans on a daily basis, following the outcomes of each lesson, to ensure that activities are well matched to each group or individual's needs. Classroom assistants are directed by class teachers and support a range of children throughout each week, depending on particular needs.

All children have access to a wide range of resources to support their learning such as Numicon, Diennes, number lines, 100 squares, bead strings, digit cards and small apparatus. Children and adults use ICT in maths lessons where it will enhance their learning and to assist with modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning to everyday situations.

Maths Working Walls form part of every classroom display. They are an interactive resource used by both staff and children which change to reflect current learning. They may display relevant mathematical vocabulary, mental or written methods of working, facts to be learned, problem solving strategies and challenging questions to get children thinking.

Curricular targets are used to support improvement. They operate at small group or individual level and identify next steps for identified areas of learning. Targets are informed by analysis of children's work, discussions with children and other assessment information. Day-to-day assessment strategies are used for continuous review of each child's progress and children are involved in assessing their own progress towards achievement of their targets.

Feedback and Marking – see separate policy (Appendix)

Development of Calculation Skills

Mental Calculation

The ability to calculate mentally is at the heart of mathematics at Nunnery Wood Primary School. From the Early Years Foundation Stage onwards, mental methods of calculation are emphasised ('Mental Methods Matter Most') and all children are given daily opportunities to develop and practise these. Children are encouraged to always use mental methods of calculation, including the use of informal jottings when necessary, and only to use a written method when it is more efficient to do so.

Written Methods of Calculation

Policies detailing the school's agreed approach to progression in recording standard written methods for addition, subtraction, multiplication and division have been drawn up by the mathematics subject leader after consultation sessions with staff (see Appendix)

Assessment, Recording and Reporting

Assessment is an ongoing process that informs next steps in planning, teaching and learning. In this way, assessment is *for* learning.

We assess children's work in maths by using short, medium and long term assessments:

Short term: ongoing daily teacher assessment is used to inform our short-term planning. Teachers often make use of mini quizzes (topic-specific) to start and end a sequence of learning. These have two main purposes: to organise children into groups for the oncoming learning and to assess progress at the end of the learning sequence.

Medium term: we make use of Rising Stars assessment tasks and progress tests to measure children's progress against key objectives covered. We use APP-style tracking grids to track progress of individuals.

Mental maths: at the start of each half term, a mental maths quiz ('The Big Quiz') set by the teachers in each TLT is completed by all children from Year 1 upwards. Results are analysed by each class teacher and next steps in learning are planned. Areas for development form the basis of mental maths sessions for the following few weeks. The same test is repeated at the end of the half term and progress for each child is analysed. This information is fed back to the subject leader.

Written calculations: at the end of each term, written calculation assessments are completed by all children from Year 1 upwards. These are analysed by class teachers and next steps in learning are planned. This information is fed back to the subject leader. These assessments are stored in individual blue 'Written Calculation' books and passed on to the next class teacher each July.

Long term: towards the end of the school year the following assessment activities are undertaken:

Year 2: tests and tasks are used by Year 2 teachers to assess children's performance. They take place in May and June and the results are used diagnostically. Teacher assessment is moderated internally and it is also moderated periodically by the authority to ensure the consistency of judgments.

Year 6: teacher assessment is needed to provide statutory assessment levels at the end of each academic year. In addition, Statutory Standard Assessment Tests (SATs) are taken by all Year 6 children in May. The papers are externally marked and the results are sent back to the school in July. Results are evaluated and strengths and areas for development are identified to inform future teaching. The results are also sent out to parents.

Years 1, 3, 4 and 5: throughout each academic year, teachers use a range of information (eg. Sandwell assessments, target analysis, progress tests and mini-quizzes) to award a level and a sublevel to each child. The levels are entered into the school's data tracking system and progress of different groups of children is monitored and analysed by the class teacher. Information regarding strengths and weaknesses is used to inform teaching and learning.

Assessing Pupils' Progress (APP)

APP supports teachers in providing a broad mathematics curriculum and it develops their skills and judgments for assessing pupils' progress. Teachers 'step back' periodically to review pupils' ongoing work and relate their progress to the National Curriculum. The information is used to highlight strengths and weaknesses and to inform future planning of teaching and learning.

Moderation

Each term, teachers are selected to take annotated sets of work to an internal moderation meeting, in order to ensure that level judgments made are consistent, reliable and aligned with national standards.

A cluster moderation meeting follows later in the term whereby the collection of internally moderated work is taken to a meeting attended by teachers from other schools. The work is discussed and judgment is agreed – this further ensures a consistency of approach in assessment.

During the year, teachers also have the opportunity to share and discuss collections of maths work with teachers working within the same phase from another local school.

Weekly PPA sessions are used to moderate samples of maths work from children within the team. APP assessment grids are used in this process and a record of the outcomes are filed in class moderation folders. These records are regularly monitored by the Deputy Head Teacher.

Parents are informed in writing of the progress their child has made and their level of attainment compared with national expectations for the year group in an annual progress report issued during the latter part of the summer term. Termly parents' consultations are offered, when teachers report verbally on progress, attitude and attainment.

Pupil Progress Meetings

Pupil progress meetings (PPMs) are held every term to discuss the progress of children who have been identified as vulnerable to underachievement. These meetings are attended by the Headteacher, the Deputy, the class teacher and key stage leader plus the SEND manager. Individual children's specific learning difficulties are discussed and interventions and next steps are identified to ensure at least satisfactory progress is made over the course of each term.

School Pupil Tracker (SPT)

SPT is used by teachers to enter termly assessment levels and sub-levels for every individual within their class. Class teachers and senior leaders then analyse the data to inform next steps at individual, group, class, cohort, key stage and whole school level.

Mathematics Across The Curriculum

All children are provided with a range of learning opportunities in order to extend and develop their mathematical skills. These opportunities occur across the breadth of the curriculum, where links between mathematics and other subjects are of great importance.

ICT is used in various ways to support teaching and to motivate children's learning; it involves using computers, calculators, programmable robots and a range of software and audio-visual aids. ICT resources and facilities are only used in mathematics lessons when it is the most efficient and effective way of meeting the lesson objectives.

Pupils with SEND and Individual Provision Maps (IPMs)

Teachers aim to include all pupils fully in their mathematics lessons. All children benefit from the emphasis on oral, mental and practical work, however, a pupil whose difficulties are severe or complex may need to be supported with an individualised provision map (IPM) which is tailored with specific targets to meet their individual needs.

More Able and Gifted Pupils

More able and gifted pupils are taught with their own class and challenged through quality first teaching, matched activities and open ended challenges as well as taking part in inter-schools quizzes and competitions.

Monitoring

Monitoring of teaching and learning in maths is undertaken by the members of the Senior Leadership Team on a regular basis as part of regular school self-evaluation strategies. Monitoring activities include:

- scrutiny of planning files
- data analysis
- book looks
- discussions with staff
- discussions with pupils
- lesson visits

