Woodlands Primary School

Mathematics Policy

Mathematics is a tool for everyday life. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems. It also provides the materials and means for creating new imaginative worlds to explore.
The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high expectations for attainment in mathematics.
Using the Programmes of Study from the National Curriculum in England it is our aim to develop:

- √ a positive attitude towards mathematics and an awareness of the fascination of mathematics
- √ competence and confidence in mathematical knowledge, concepts and skills
- √ an ability to solve problems, to reason, to think logically and to work systematically and accurately.
- √ initiative and an ability to work both independently and in cooperation with others
- √ an ability to communicate mathematics
- √ an 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.
- √ a deeper understanding of mathematics through a process of enquiry and investigation.

SCHOOL POLICY AND THE NATIONAL CURRICULUM

<u>Knowledge Skills and Understanding</u>

At KS1 and KS2 teachers use the National Curriculum in England for Teaching Mathematics to ensure that all parts of the National Curriculum Programme of Study are taught.

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- √ practical activities and mathematical games
- √ problem solving
- √ individual, group and whole class discussions and activities
- √ open and closed tasks
- √ a range of methods of calculating eg. mental, pencil and paper, using models and images and using a calculator
- √ working with computers as a mathematical tool
- √ deepening their understanding through a range of mastery tasks.

CROSS-CURRICULAR ISSUES

Throughout the whole curriculum opportunities exist to extend and promote mathematics. Teachers seek to take advantage of all opportunities.

TEACHERS' PLANNING AND ORGANISATION

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics coordinator.

The approach to the teaching of mathematics within the school is based on three key principles:

- √ **a mathematics lesson every day**
- √ **a daily Big Maths session which focuses on core numeracy skills**
- √ **a focus on exploring, reasoning and challenging thinking**

Each class organises a daily lesson of between 45 and 60 minutes for mathematics (normally 60 minutes)

Lessons are planned using a common planning format (see Appendix) and are collected and monitored by the mathematics coordinator, they are based on the White Rose Maths Hub Scheme of Learning.

Teachers of the Reception class base their teaching on objectives in the Framework for Reception; this ensures that they are working towards the 'Early Learning Goals For Mathematical Development'. Towards the end of Reception teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1 they are familiar with a 45-minute lesson.

SPECIAL EDUCATIONAL NEEDS

Children with SEN are normally taught within the daily Mathematics lesson and are encouraged to take part when and where possible (please see the section on differentiation). When additional support staff are available to support groups or individual children they may withdraw a group to use intervention materials.

Where applicable children's My Support Plans / My Plans incorporate suitable objectives from the Programme of Study and teachers keep these objectives in mind when planning work.

Within the daily mathematics lesson, teachers not only provide activities to support children who find Mathematics difficult but also activities that provide appropriate mastery activities and challenges for children who are high achievers in Mathematics.

EQUAL OPPORTUNITIES

In the daily mathematics lesson we support children with English as an additional language in a variety of ways.

> eg. repeating instructions, speaking clearly, emphasising key words, using picture cues, models and images, playing mathematical games, encouraging children to join in counting, chanting, finger games, rhymes etc. …….

PUPILS' RECORDS OF THEIR WORK

There are occasions when it is both quick and convenient to carry out written calculations. It is also important to record aspects of mathematical investigations. Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of recording.

Children are encouraged to use mental strategies if these are more appropriate than a written algorithm.

Exercise Books for Recording

It is school policy that the following pattern is used:

√	KS1:	plain exercise books moving to square paper when appropriate
√	Year 3:	1 cm squares
√	Year 4:	1 cm squares
√	Year 5:	7mm squares / 10mm squares for shape and space work
√	Year 6:	7 mm squares / 10mm squares for shape and space work

All children are encouraged to work tidily and neatly when recording their work with a strong focus on the school handwriting policy being used. When using squares one square should be used for each digit.

MARKING

The quality of marking is crucial. A simple 'X' is of little assistance to a child unless accompanied by an indication of where the error occurred, together with an explanation of what went wrong, through next steps and questioning that results in a child led understanding of any misconceptions in the work. Comments in pupil books should refer back to the Learning Objective shared at the beginning of the lesson. If the child has achieved the Learning Objective then 'LO Achieved' or 'LO met' is written in the pupil's book.

Marking should be both diagnostic and summative and school policy believes that it is best done through conversation with the child but acknowledges that constraints of time do not always allow this.
When appropriate the children themselves can mark exercises which involve routine practice with support and guidance from the teacher. Where appropriate children in Years 5 and 6 are encouraged to check computational exercises by using the inverse operation and occasionally with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct their errors.
(for more detail see the School Marking and Assessment for Learning Policy).

ASSESSMENT AND RECORD KEEPING

Teachers use the National Curriculum in England and the White Rose Maths Hub supporting materials to plan assessment activities. The work set, combined with a scrutiny of children's recorded work over the previous six weeks, helps to review how well children have taken in the topics taught and identifies any remaining misconceptions.

Formal Assessment

Teachers assess all pupils towards the end of the Autumn, Spring and Summer Terms (end of Key Stage SATs, Optional PUMA Test – Progress in Understanding Mathematics Assessment Tests and the termly assessment materials provided by the White Rose Maths Hub). The results of these assessments are recorded on class tracking sheets (Excelling, Exceeding, Expected, Developing and Emerging) and intervention strategies are recorded on a separate sheet and discussed termly in Pupil Progress Meetings with the Headteacher and Maths Coordinator.
FS2 and KS1 also use the Big Maths Progress Assessment Test weekly to inform their Big Maths planning. We also use this to inform our teacher assessment of each child's attainment.

Evidence – As an **ongoing assessment practice**, teachers and teaching assistants should collect evidence that could be used to support an effective judgement. This must be independent work by the child, i.e. something they require no teaching input to show that they are secure with. This could be:

- End of unit assessments.
- Work from numeracy books that has not been directly taught to the child, e.g. a lesson on estimation where the focus/LO is on this but the child uses grid method within the lesson, independently.
- Something the child has said during the course of a mathematical discussion – recorded on a post-it note or equivalent. See 'Talk Sheet'.
- Evidence from Maths Games – this could be a quick comment summing up an observation of a child by a teacher.

This evidence is then used to inform our Teacher Assessments of each child which we update termly and is kept in their assessment folder.

Impact – Gaps in the child's numerical understanding will become apparent through their arithmetic assessments and through their Big Maths sessions (Big Maths Test in FS2 and KS1). Individual pupil targets will be based on areas of weakness found. As class teachers, areas of weakness can be addressed within lessons and focus group work.

REPORTING TO PARENTS

Reports are completed before the end of the summer term and parents are given opportunity to discuss their child's progress at an informal 'drop-in' session and 1 formal appointment based meeting throughout the year.
Teachers use the information gathered from their half termly assessments to help them comment on individual children's progress.

PARENTAL INVOLVEMENT

- √ Parents are invited into school twice yearly to look at their children's work.
- √ An open evening is held once a year.
- √ When significant changes have been/are made to the mathematics curriculum parents are invited to a meeting or sent information via the half termly newsletter.
- √ The maths co-ordinator runs regular parent workshops which give parents information on teaching methods.

DIFFERENTIATION

This should be incorporated into all mathematics lessons and can be done in various ways:

- Stepped Activities which develop skills, application of skills and mastery of skills but that also cater for the less able (chilli challenge).
- Common Tasks which are open ended activities/investigations where differentiation is by outcome.
- Resourcing which provides a variety of resources depending on abilities eg. Base 10, place value counters, ten squares, counters, cubes, 100 squares, number lines, mirrors.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme and usually at no more than three levels.

MONITORING AND EVALUATION

The mathematics coordinator is released regularly from their classroom in order to work alongside other teachers. This time is used to monitor and evaluate the quality and standards of mathematics throughout the school and enables the coordinator to support teachers in their own classrooms.

Opportunities for teachers to review the scheme, policy and published materials are given on a regular basis during staff meetings.

PRACTICAL RESOURCES

All teachers should organise an area within or just outside the classroom dedicated to mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources.

Resources which are not used or required regularly are stored centrally i**n the main resource area outside the school office.**

HOMEWORK

Refer to the school Homework Policy for more detail.
It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in promoting children's learning in mathematics.

TARGET SETTING

Children have numeracy targets which are written in their assessment passports and they should be aware of them at all times. They should be aware of their own learning and know what they need to do to improve and make progress.

Targets at Woodlands relate to the core numeracy skills undertaken in the daily Big Maths sessions. They are based on National Curriculum standards but are selected by the children. This 'bottom up' approach to target setting gives children ownership of their learning and invites opportunities for self directed learning at home. In EYFS, the targets are set according to the area of learning mathematics (Number). In KS1, targets are always on the wall of the classroom and, therefore, reflect one part of the children's core numeracy learning. The teacher is responsible for monitoring progress against the target.

ROLE OF THE CO-ORDINATOR

To take the lead in policy development
To support colleagues.
To monitor progress in Mathematics.
To take responsibility for the choice, purchase and organisation of central resources for Mathematics, in consultation with colleagues.
To liaise with other members of staff to form a coherent and progressive scheme of work which ensures both experience of, and capability in, Mathematics.
To be familiar with current thinking concerning the teaching of Mathematics, and to disseminate information to colleagues.
To create, maintain and implement an annual Action Plan.
The co-ordinator will be responsible to the Headteacher and the Governors.

Agreed by

Head teacher

Date: 13/10/2017
Policy agreed:
Policy reviewed:

Agreed by

Chair of Governors

Date: