Pound Hill Infant School

Mathematics Policy

Our school vision
Every member of our School Community:

- A Successful Learner
- A Responsible Citizen
- An Effective Contributor
- A Happy, Confident Individual

Pound Hill Infant School Child Protection Statement
The Governing body takes seriously its responsibility under section 175 of the Education Act 2002 to safeguard and promote the welfare of pupils; and to work together with other agencies to ensure adequate arrangements within our school to identify, assess, and support those children who are suffering harm.

We recognise that all adults, including temporary staff, volunteers and governors, have a full and active part to play in protecting our pupils from harm, and that the child's welfare is our paramount concern.

All staff members believe that our school should provide a caring, positive safe and stimulating environment that promotes the social, physical and moral development of the individual child.

Rationale
This policy is set within the school's vision and outlines the teaching, organisation and management of the mathematics taught and learnt at Pound Hill Infant School. Our curriculum is fully inclusive of all children. We aim to inspire all children to reach their full potential in this area of the curriculum. We strive to encourage our children to have the confidence to follow their own lines of enquiry, solving all kinds of problems along the way, usually set in a context. Our teaching and learning is through a creative and imaginative approach. Through teaching with a problem solving approach, children will learn to understand, clarify information; consider what they know that will help them to solve problems, realising what they need to know next; create systems and strategies, organising information in a way that helps find patterns and ultimately solutions and to communicate and present their findings effectively.

The school's policy for mathematics is based on the new National Curriculum 2014. Teachers plan opportunities for children to practise and apply the skills, knowledge and understanding acquired through mathematics lessons to other areas of the curriculum.

The implementation of this policy is the responsibility of the Governing Body, the Headteacher and the teaching staff.

Aims
The school's aims in Mathematics: -

- to promote proficiency, confidence and competence in Mathematics
- to give all pupils equal opportunity to experience all areas of the Mathematics curriculum
- to relate mathematical concepts to real life problems
- to enable pupils to have a quick recall of basic facts
- to encourage pupils to select the appropriate apparatus
- to promote the use of mathematical language, appropriate to the age and ability of the children
- to enable them to think critically and communicate their understanding, encouraging children to share their mathematical experiences through discussion and clarify their thoughts
- to encourage children to articulate the mental processes involved in solving problems
- to encourage children to find their own solutions and methods
- to develop a positive attitude to Mathematics

As a result of their learning in mathematics and problem solving across the curriculum children will be prepared for applying their skills effectively in everyday life situations, in their future learning and in the work place.

Teaching and Learning

All classes generally have a daily, dedicated Mathematics lesson, which is about 50 minutes in duration. Links to Mathematics are made within other subjects enabling pupils to develop and apply their mathematical skills. Where possible teachers make links to Mathematics through Mantle of the Expert (MOE) sessions and make links to PSHCE where appropriate. Mathematics contributes to a variety of subjects within the primary curriculum and when reviewing medium plans cross-curricular links are considered. Opportunities will be sought to draw mathematical experience out of other activities, such as MOE sessions. This will allow children to begin to use and apply mathematics in real contexts.

Within the Mathematics lesson there is a balance of whole-class work, group teaching and individual or paired work within classes of mixed abilities. Progress is carefully monitored and recorded by the class teacher, Head Teacher, SENCO and Assessment for Learning Leader.

Mathematics lessons in Y1 and Y2 have a similar structure:

- Oral and mental work for 5-10 minutes.
    - This will involve whole-class or group work to practice, sharpen and develop mental and oral skills.
- The main teaching activity for up to 30 minutes.
    - This will include direct teaching and pupil participation. Pupils may work as a class, in groups, pairs and individually
- A plenary lasting about 10 minutes.
    - This will involve work with the whole class to, for example, identify progress, clarify any misconceptions, summarise key facts and to discuss the next step.

Though the nature of lessons will be very different depending on the needs of the class, children should be: active; practising skills they haven't yet mastered; learning something new or learning to apply their knowledge to a range of different contexts. They should be working at a good pace and being productive; sharing their thoughts and methods and being successful.

Early Years sessions will contain similar elements. Mathematics lessons will provide opportunities for children to practise and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning.

Planning

Planning begins from a thorough understanding of children's needs gleaned through effective and rigorous assessment and tracking, combined with high expectations and ambition for all children to achieve.

Teachers plan collaboratively in year groups and generally one member of the team will be responsible for ensuring coverage of the curriculum. As a new curriculum has been introduced planning is key and year groups are working together to ensure new objectives are covered following our ethos within the school. Teachers are also using a variety of other resources such as the National Numeracy Strategy 1999, puzzles and games and other materials to support their planning, using the ideas for activities in the class. Short term planning sheets include learning objectives, vocabulary, apparatus needs and computing resources as well as details of the three lesson parts and differentiation.

Each class is resourced with appropriate apparatus according to the age of the children. Some items of equipment are shared within year bands e.g. stop clocks and capacity containers. General support resources such as number squares and number lines are readily available in each classroom. Numicon is available to each year group and classes are well equipped with apparatus. Since Numicon was launched in September 2013 it has become a valuable resource and teachers regularly use it as a visual aid to support concepts within lessons.

Foundation Stage

In the Foundation Stage children follow the objectives for Reception from the Foundation Stage Curriculum. Emphasis is placed upon a practical approach using apparatus to explore, experiment, and investigate. This ensures there is plenty of scope to explore their ideas and reasoning. This will also promote social skills and develop mathematical language and understanding.

Computing

- Computing is used in a variety of ways to support teaching and motivate children's learning. Computers are used in Mathematics lessons when it is the most efficient and effective way of meeting the lesson objectives. All classes have access to laptops (Fizz Books) and all classrooms have a computer.
- 'Easiteach' is available in all classrooms. This can be used in conjunction with interactive white boards and includes materials to support the teaching of mathematics. Teachers can also use Easiteach to create their own resources, tailor made to meet the needs of a class or year group.
- 'Maths Whizz' is an animated program which can be used to teach and consolidate a wide range of concepts in a way which appeals to young children. This can be found on all Fizz Books and classroom computers.
- 'ICT in Maths' is a useful program and includes a function machine and hidden numbers on a hundred square.
- DataSweet collects data and draws a variety of graphs to different scales.
- Children use a Roamer (Y2), Bee bot (EY) Constructabots/ Probots (Y1) and Terry the Turtle when learning about direction and angle of turn.
- Mathletics is a new learning tool whereby children can access maths challenges on a variety of areas within maths. This learning tool can also be accessed at home by parents who wish to stimulate their children further.

Assessment

Assessment takes place at three levels: short-term, medium-term and long-term. These assessments are used to inform teaching in a continuous cycle of planning, teaching and assessment.

- Short-term assessments are an informal part of every lesson, they help teachers to check pupils' understanding and adjust lesson plans if necessary. Assessment for learning occurs within lessons, as immediate feedback enables children to understand their misconceptions and where they need to go next, evaluating the process.
- At the end of a block of work teachers assess children's achievements against National Curriculum statements of attainment through an assessment tool developed by the West Sussex Maths Advisory Team. This assessment is recorded on class record sheets.
- Each half term the children's attainment for MA1 and both AT1 and other relevant attainment targets are recorded on a class tracking sheet. Problem-solving investigations are incorporated into the lessons to enable children to work logically and in a context, using their developing using and applying skills. During these investigations, there should be a honing in on specific problem solving skills that are transferable to other contexts. These examples can be found in an Assessment File for each class together with examples of achievement in AT1 at various levels.
- Long-term assessments take place towards the end of the school year through the National Curriculum SATs in Year 2. Teachers also refer to their class record of pupils' attainment. This information enables teachers to produce a summative record, which is communicated to the next teacher. Parents have one written record of their child's progress per academic year and at least two interviews with their child's teacher during one academic year.

Parental Involvement

Parents can be invited in for maths workshops and leaflets are sent home for parents in Year 1 and Year 2, to enable them to be aware of the key skills in addition and subtraction and how we might teach them at school.

Target Setting

In Early Years, the Early Years tracker and Learning Journals are used to plan next steps in learning. These are shared with the parents each half term. In Key Stage One, the electronic Target Tracker Program is used. This sets end of year targets for Mathematics. This informs teachers' planning and the provision of an appropriate differentiated Mathematics curriculum.

Targets set for children with a Special Educational Need are also addressed through group sessions led by the Learning Support Assistant. Separate LSA plans are written which incorporate the targets.

The Leadership Team monitors the progress of individual children towards achievement of the targets. Regular pupil progress meetings are held with teachers. These are led by the Assessment Leader. Intervention programs are put into place to support individuals or groups of children at risk of underachieving. These are closely monitored by the Mathematics Leader.

Environment

- All classroom displays in each year group will show the range of mathematical terminology and symbols
- A large number line should be displayed, including the Numicon number line
- Numicon number bonds are a useful tool to display and should be visible
- A large 100 square should be easily visible for children to use
- Apparatus should be out on a table top display which reflects the current learning- e.g. shapes/ Diennes/ Money. Challenges for the children should be included. This display will need to be changed frequently to be in line with current planning and consolidation of activities. There should be specific vocabulary and questions that relate to the mathematic learning which is on display.
- Numicon shapes should be easily accessible to the children to support their learning.
- Drawers should be clearly labelled so that children are aware of the different apparatus they can choose to solve a problem and easily access it.

Inclusion

Our aim is to ensure all children (all groups) can reach their full potential in Mathematics according to their individual abilities. All pupils are taught within their class and receive appropriate differentiation according to their ability. Pupils who require additional support for example as highlighted on an IEP will be given extra support. As a school we identify which children or groups of children are underachieving and put in place interventions to improve their attainment. The identification takes place through the analysis of data on the school's electronic tracking document, the monitoring by the Additional Needs Manager and individual teacher's notes and records discussed at pupil progress meetings. The Mathematics Leader would also track groups of children and monitor any groups who are underachieving. From this data the school will identify any gender issues that exist and plan initiatives that would address these aspects. Where support is deemed necessary children can access interventions. This could be differentiated work planned by teachers, support given by LSAs, the setting up of booster groups or an intervention program such as 'Closing the Gap'. Intervention provided to boost children's progression in maths should be tightly planned, with success criteria set and assessments made frequently to ensure progress is being made.

Able pupils are taught in their own class, and are catered for through differentiated work, extra challenges, harder problems, extensions, additional problem solving and investigations. Able pupils work to the Year Objectives which best meet their needs. Class teachers may choose to use the Teaching Assistant to work with able pupils in order to challenge them and explore their reasoning skills.

Equal Opportunities

All children have an entitlement to the Mathematics Curriculum regardless of gender, ethnicity or home background. Positive attitudes towards Mathematics are encouraged in girls and boys.

Written: January 2008
Reviewed and adapted: September 2014
Next review date: September 2015