

BALDERSTONE
CHURCH of ENGLAND
PRIMARY SCHOOL



BALDERSTONE ST LEONARD'S CHURCH OF ENGLAND PRIMARY SCHOOL

Mathematics Policy

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Introduction

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

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.

We follow the 2014 National Curriculum for Mathematics, alongside Lancashire's Progression documents and long term planning. This provides detailed guidance for the implementation of the National Curriculum for Mathematics and ensures continuity and progression in all teaching.

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the Revised Statutory Framework for the EYFS (2012) and the Development Matters in the EYFS (2012)

Aims and Objectives

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.

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

At Balderstone Primary School we aim to:

- build children's self-confidence in their ability to deal with mathematics.
- develop a positive attitude to mathematics as an interesting and attractive subject in which all children gain some success and pleasure;
- develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
- encourage the effective use of mathematics as a tool in a wide range of activities within school and, subsequently, adult life;

- develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary;
- develop an appreciation of relationships within mathematics;
- develop ability to think clearly and logically with independence of thought and flexibility of mind;
- develop children's ability to work systematically, co-operatively and with perseverance.
- develop mathematical skills and knowledge and quick recall of basic facts

Equal Opportunities

At Balderstone St Leonard's all teaching ensures that all pupils, irrespective of gender, ability, ethnicity and social circumstances have access to our mathematics curriculum and make the greatest progress possible. Pupils can be supported or challenged through differentiation, resources and adult support. All teachers have a responsibility to ensure that individual pupil needs are met and progress monitored.

Teaching and Learning

The school uses a variety of teaching styles to cater for the different 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 range of whole-class, group and individual 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, egg boxes, base 10, digit cards and other small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods.

Although the programmes of study of the National Curriculum (2013) are organised into distinct domains we believe as the National Curriculum states 'that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasing sophisticated problems' (DFE, 2013:3) With this at the forefront of our teaching we ensure that using and applying 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 within Balderstone Primary School are viewed as an important 'asset' to the 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 and LA led Inset.

Foundation stage

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.

Planning

Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2013) and the Mathematics Planning National Curriculum documentation – Lancashire County Council (2014) 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 LCC medium term planning documentation. Our weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

We do not believe in following one scheme, but in using a variety of resources available in order to plan activities that match the needs of the class and each individual child.

Planning includes mathematics homework tasks to practise and consolidate children's skills and knowledge. How often homework is given and the amount set is at the discretion of the teacher.

We ensure our assessments feed into our planning and that our lessons are highly differentiated, allowing for all children to be challenged at their own level.

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

Mathematics across the curriculum

Opportunities are also provided for mathematics in other curriculum areas, enabling children to develop and apply their mathematical skills. Some examples of these are:

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. In science pupils will for example order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use a line graph or bar chart, and plot, interpret and predict from graphs.

Art & DT

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; this may not be straightforward if only part of a packet of ingredients has been used.

History, geography & RE

In history and geography children will collect data by counting and measuring and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals all have a mathematical basis. For older children historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know.

Physical education

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

PSHE

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

These opportunities aim to demonstrate to children the importance of mathematics in their future lives and provide them with a real purpose for their learning.

Teaching Mathematics to SEND children & AGT Children

At Balderstone Primary School we aim to provide a broad and balanced education to all pupils. Quality First Teaching is considered an entitlement for all pupils. Effective pupil tracking enables identification of pupils, who may benefit from early 'intervention' at an appropriate level,

We also recognise, and aim to make provision for, pupils who have a particular ability in mathematics. These children are brought to the attention of the AGT co-ordinator and work is planned according to their abilities. Identified pupils have the opportunity to participate in AGT sessions with our local cluster group (MOBSS).

Monitoring and Evaluation

Monitoring and evaluation in mathematics follows the school's monitoring and Evaluation policy. Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the headteacher and the subject leader.

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

Assessment

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class. We strive to make our assessment purposeful, allowing us to match the correct level of work to the needs of the pupils, thus benefiting the pupils and ensuring progress.

The assessment procedures within our school encompass:

- Short term assessments which include teacher's assessments of pupils' written work and performance on tasks, daily observations of pupils and informal discussions and questioning.
- Adjusting planning and teaching within units in response to pupils' performance;(use of short term assessments)
- Medium term assessments which give children test experience and allow teachers to ascertain if the learning has been retained each half term.
- Using knowledge of pupils drawn from ongoing pupil tracking records and the progression document to inform 'prior learning' at the beginning of each unit of work to guide our planning and teaching;
- Use of the 'assessment for learning' questions within the assessment section of the Lancashire Interactive Planning tool (National Curriculum 2014) to check learning against the end of year objectives. If necessary future planning is adapted in response to assessment outcomes;
- Use of ongoing teacher assessment and the KLIPS in order to identify gaps in attainment on a half termly basis and at the end of each full term using this information to make judgements on a child's standard using the 'entering', 'developing' and 'secure' judgements;
- Use of information gained from statutory and optional tests. Analysis is done at both a quantitative and qualitative level. Information gained is used to set focused curricular targets (what to teach) and also to determine which strategies or methods are particularly effective in respect of specific areas of mathematics (the how and why).

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 acknowledging positive achievements. This could include praise for use of a viable method even if the end results were incorrect. Children are frequently provided with next steps to support and enhance their understanding and make links between previous and future learning. Children are given opportunities, and actively encouraged, to explain their work to others and to display their work when it seems appropriate. They are encouraged to value and respect the work of others.

Our marking follows the school's 'Feedback and Marking Policy'