



Gaskell Primary School

Maths Policy

This policy outlines the guiding principles by which Gaskell Community Primary School will implement Mathematics in accordance with statutory requirements.

Our rationale for teaching Maths:

This policy has been created by staff and Governors to ensure consistency and progression in the school's approach to Mathematics, enabling 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 Gaskell Primary School we aim to:

- 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 an appreciation of creative aspects of mathematics and awareness of its aesthetic appeal;
- develop mathematical skills and knowledge and quick recall of basic facts

How Mathematics is structured through the school

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 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. 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 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.

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.

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). 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.

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.

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

Mastery in Maths



The Mastery-learning model forms the basis of our approach to traditional teaching. This means spending greater time going into depth about a subject as opposed to racing through the things that all children should know. Previously, racing through content lead to some children having large gaps in subject knowledge because the concept they had just learnt was either too big or learnt too quickly. As a primary school, it is our duty to ensure that children have an absolutely solid, concrete understanding of subject knowledge and skills as well as being emotionally resilient for secondary school.

Now, we have the confidence to take learning at a steadier and deeper pace, ensuring that no child is left behind, as well as providing deeper and richer experiences for children who are above the national expectation for their age.

We focus on all children achieving what is expected of their age group and not going beyond this. Evidence shows that children need to be able to understand a concept, apply it in a range

of situations and then be creative to really understand it. Simply going beyond their age group does not guarantee they understand something, it just means they have heard it.

At our school no child will be taught content from the year group above them, they will spend time becoming true masters of content, applying and being creative with new knowledge and skills in multiple ways.

In short, this means working towards:

- Teach less, learn more: less teacher talk and more evidencing learning and progress
- No child left behind: all children are enabled to keep up every day.
- Space and time to experience and apply, with all children entitled to additional support to ensure they do not fall behind or to go deeper
- Understanding real life applications wherever possible to make learning relevant and not abstract; nothing should be taught without a purpose.

All of this means that there is a change in the way we teach and assess children, most notably in how we organise the children's learning and how we report their progress to parents.

We will be doing more of this:

- Teaching all children in class, together, most of the time
- Verbal feedback during lessons, shorted comments in books and more ticking of correct concepts
- Spending longer on one idea
- Giving children who need it, additional support over shorter, more intense periods, like a day or week.
- Daily or weekly mini assessments with a few formal tests over the year

And less of this:

- Formal marking with lots of written feedback and highlighting
- Covering lots of ideas in one week
- Formal, long term interventions to boost them out of class
- Separating children into ability groups
- Formal testing of children weekly or termly

This approach is seen as good practice. It is promoted by the government and seen as the best way to deliver the new national curriculum.

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 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

At Gaskell Primary School 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 school supports teacher assessment through the use of the Assessing Pupils’ Progress (APP) materials *and/or* the Mathematics Progression National Curriculum LCC (2014) documentation. APP provides clear criteria against which judgements can be made about levels and sub-levels in mathematics *and/or* the Mathematics Progression National Curriculum LCC (2014) documentation sets out a progression of learning for individual strands of the National Curriculum against age related expectations.

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 the progression document to inform ‘prior learning’ at the beginning of each unit of work 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 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 APP grids in order to identify gaps in attainment on a half termly basis and at the end of each full term using this information to sub level a child’s attainment using the low, secure and high 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).

Contribution in Mathematics to Teaching in Other Curriculum Areas

At Gaskell school we use the Focus Learning Challenge Curriculum to highlight creative learning opportunities and outcomes for mathematics across other subjects.

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, 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 is given in the ICT section of the Lancashire Interactive Planning tool (National Curriculum 2013).

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

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. 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 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.

Resources

There is a range of resources to support the teaching of mathematics across the school. Staff are encouraged to use practical and visual models to support children's learning in mathematics. All classrooms have a wide range of appropriate practical apparatus. A range of audio visual aids are also available and a range of software is available to support mathematics work.

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.

Monitoring

Monitoring of the standards of children's work and of quality of teaching in mathematics is the monitored using a range of strategies by the subject leader, phase leaders and the Senior Leadership team. Monitoring activities include: work scrutinies, planning scrutinies, lesson observations, pupil interviews and learning walks..

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.

Review:

This policy will be reviewed by the Subject Leader and the Senior Leadership team then presented to Governors before being formally adopted by the school.

Date for next review of this document January 2020.

Written by: James Cranage

Date: January 2019