



Calow Church of England (V.C.) Primary School

Mathematics Policy

December 2016

The Nature of Mathematics

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the real world. Mathematics can be describe, illustrate, to interpret and explain. 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 and exploring new, imaginative worlds. The utility of mathematics is unquestioned, but the skills and knowledge should be embedded in purposeful activities.

Numeracy

Numeracy is a proficiency that involves confidence and competence with numbers and measures. It requires an understanding of the number system, a repertoire of computational skills and an inclination and ability to solve number problems in a variety of contexts. Numeracy also demands practical understanding of the ways in which information is gathered by counting measuring and is presented in graphs, diagrams, charts and tables. As teachers we aim to help children acquire this proficiency by giving sharp focus to the relevant aspects of the programme of study for mathematics as well as providing meaningful, purposeful activities for skills to be applied to.

Aims

At Calow Primary School, it is our aim to develop:

- a positive attitude to mathematics and awareness of the fascination of maths.
- competence and confidence in mathematical skills, concepts and knowledge (including the rapid recall of basic facts).
- an ability to solve problems, to reason ,to think logically and to work systematically and with accuracy, imagination and flexibility of mind.
- the skills of working systematically, independently and co-operatively.
- the ability to use and apply mathematics across the curriculum and in real life.

Knowledge, Skills and Understanding

The renewed Framework illustrates the intended range and balance of work in primary mathematics to make sure that pupils become numerate. The objectives in

the Framework cover all aspects of the National Curriculum for mathematics in Key Stages One and Two. The objects for the Early Years Foundation Stage are based on the Number and Shape , Space and Measurement strands of Mathematics of the EYFS curriculum. Work in Reception provides a bridge from the EYFS to the National Curriculum.

Planning

Through careful planning supported by the Collins “Busy Ant Maths” scheme , we aim to ensure that children throughout the school , the children are given opportunities for

- practical activities and mathematical games
- problem solving
- working in a variety of settings and environments away from the classroom – outdoor learning.
- individual, group and whole class discussions and activities.
- open and closed tasks.
- a range of methods of calculating e.g. mental, mental with jottings , pencil and paper and using a calculator (including interpreting the read out)
- working with computers as a mathematical tool including accessing Mathematics learning online
- developing their personal qualities, perseverance and positive attitude to mathematics through the rich and varied opportunities offered to them.

Links Between Mathematics and Other Subjects

Mathematics contributes to many other subjects within the primary curriculum, often in practical ways. Activities such as measuring and recording the growth of a plant, rainfall, temperature , investigating cog/pulley ratios , timing events etc.

Pupils’ Mathematical Activities

The school’s essential approach is to teach mathematics as suggested by the four principles of the National Numeracy Strategy:

- dedicated mathematics lesson everyday
- direct teaching and interactive oral work with the whole class and groups.
- an emphasis on mental calculation, practical work and “ Using and Applying Mathematics”
- controlled differentiation, with all pupils engaged in mathematics relating to a common theme. The range and the balance of activities undertaken by the scheme of work (a continually updated developmental scheme of termly and weekly plans modified to meet the developmental needs of the children)

Pupils Mathematical Experience

The school uses a core scheme “Busy Ant Maths” to support the delivery of the objectives in the Framework . The “Busy Ant Maths” scheme supports teachers using assessment of prior learning to ensure considered progression from one lesson to the next. Regular opportunities for revisiting and extending previous learning. “Busy Ant Maths” provides opportunities for reasoning and apply mathematics in “contextually varied” situations.

Each lesson form Reception to Year Six is structured as follows:

- Oral work including daily counting activity using appropriate model or image.
- Mental and oral whole class work to rehearse, recall, refresh, refine, read and read and reason.
- Key questions to develop reasoning skills using the bank of questions stems.
- Interactive practical main teaching activities with teacher input and pupil activities. Work as a whole class, in groups, in pairs, or as individuals using appropriately differentiated activities- this may also have a series of mini plenaries in it.
- A weekly whole class problem solving challenge.
- Five key mathematical words to be identified and used in context and with accuracy by the children during the mathematics lesson.
- An aspect of using and applying mathematics in problem solving in all or any part of the lesson.
- Opportunities to use and apply mathematical skills in a range of contextually varied activities such as measurement, money and time on a regular basis.
- Children will be supported by the use of mathematical equipment and resources as appropriate to their level of development.
- A plenary to round off the lesson- this could include sorting out misconceptions, and to identify progress.
- The plenary could also be used to summarise key facts and ideas .Make links in learning and to other areas of learning, to discuss next steps, progress towards new targets and set work to do at home.

Opportunities are provided for children to work in a variety of ways, including, practical, investigative and problem solving activities, using calculators appropriately, using books and computers.

Assessment and Record Keeping

Assessment in mathematics occurs at many levels

- Assessment for learning dialogues – discussions with individual children, groups and the class
- Assessing pupil progress APP
- Observations of children working , included guided work
- Examining evidence of children’s work
- Marking and Feedback

- Class work sampling and levelling
- School and interschool moderation activities to determine levels for pieces of work or individual children.
- Peer assessment
- Assessments at the end of a unit of work
- Assessment prior to a unit of work
- Early Years Foundation Stage Profile
- SATs including optional Year 3, Year 4 and Year 5

Assessment for learning is integral to quality planning, teaching and learning . Assessments, based on AFL observations, pupils day to day work .

Assessments for pupils are recorded each half term on the “Frog Progress Tracker”. Evidence to support the teacher assessments can also be uploaded.

Children are assessed on entry to school using the Early Excellence Baseline and are continually assessed throughout the Reception year in school.

Children are tested formally at the end of Key Stages One and Two. The school uses information from test results to compare attainment against other schools.

All parents are given a formal written report detailing their child’s progress and attainment in mathematics. There are two formal opportunities per year for parents to discuss their child’s achievement and progress in mathematics.

Target Setting

The overriding target is for children to reach their full potential. The school sets targets as required by the Government in line with expectations.

In addition children are set individual targets each half term . These targets are identified in the front of pupil books. The targets are shared with the children and with their parents via a letter.

Inclusion

All staff work to ensure equal opportunities at all times .

How we cater for children who are gifted.

Children who have been identified as being gifted in the area of mathematics are given opportunities to extend and develop their learning further. Class teachers are responsible for ensuring that

appropriate challenges are set and teaching and learning opportunities are identified in their planning.

A register is kept of identified children.

How we cater for higher attaining pupils.

The higher attaining pupils will be taught with their own class and be provided with learning activities that deepen and strengthen their mathematical understanding through differentiated work and additional challenges.

When working with the whole class the teacher will direct questions which develop reasoning skills to the higher attaining pupils.

How we cater for pupils with particular needs

The daily mathematics lesson is appropriate for all pupils. Teachers will involve all pupils through differentiation. In the daily mathematics lesson children with English as an additional language will be supported in a number of ways ; eg using picture cues, emphasising key words, playing mathematical games and encouraging children to join in with counting activities.

Pupils with additional needs and an individual education plan

Within the daily mathematics lesson teachers aim to provide activities to support children who find mathematics difficult. Children with SEND are taught within the daily mathematics lesson and are encouraged to take part when and where possible. Where applicable children IEPs incorporate suitable objectives from the Renewed Numeracy Framework and teachers keep these objectives in mind when planning work.

Monitoring

Subject Leader

The Subject Leader for Mathematics is responsible for developing mathematics throughout school. At the end of the school year a position statement is produced with accompanying action plan which feeds into the School Action Plan. This process includes moderation of planning, observations of teachers, effectiveness of resources purchased. The Subject Leader is supported by the link Governor in this process.

The Subject Leader also identifies opportunities for Continuous Professional Development for themselves and all members of staff in school.

Governors

The Subject Leader will report to governors on the progression of the action plan who then report back to the School Governing Body and Development Committee. A select group of Scrutiny Governors will be monitoring the progression of Mathematics in Key Stage Two . The Scrutiny Governors will complete tasks such as moderation of children’s work and discussions with children.

5th December 2016

Review Date July 2017

Signed

Chair of Governors and Head teacher

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