



CROMER ROAD PRIMARY SCHOOL

Mathematics Policy

Date of Ratification by the Governing Body:	June 2015
Frequency of Review:	2 years
Date of Next Review:	June 2017

1. Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

2. Aims

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.

Our aims in teaching mathematics are:

- To equip pupils with the mathematics they need to become numerate.
- To develop pupils ability to apply mathematical skills with confidence and understanding when solving problems.
- To enable pupils to express themselves and their ideas with assurance, using the language of mathematics
- To develop positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- To nurture a fascination and excitement of mathematics and problem solving
- To be able to use and apply the skills in other curricular areas and everyday life.

3. Teaching Mathematics

3.1 Organisation

- A daily mathematics lesson of 45 – 60 minutes is taught in Year 1 – 6.
- Early Years Foundation Stage (EYFS) is being used for children at the Foundation Stage. There are two Early Learning Goals in the EYFS: Number and Shape, space and measure. At this stage pupils develop problem solving, reasoning and numeracy skills, both indoors and outdoors. This early introduction to mathematics will generally be undertaken orally and practically and often in the context of a class theme, e.g. a particular story. Opportunities for mathematics are developed through daily routines and in all areas of learning.
- Pupils are taught using a variety of learning styles thus enabling all children access to the curriculum.
- The skills acquired in the maths lesson are applied across the curriculum.
- A typical 45 – 60 minute lesson in Year 1 – 6 is structured like this:
 - **Oral work and mental calculation (about 5 to 10 minutes)**
This involves whole-class work to Rehearse, Recall, Refresh, Refine, Read, Reason using mental and oral skills.

- **The main teaching activity (about 30 to 40 minutes)**
This includes both teaching input and pupil activities and a balance between whole class, guided group work, paired and individual work.
Children may work in mixed or ability groups according to the intended learning outcome.
Misconceptions may be addressed and clarification brought.
- **A plenary (about 10 to 15 minutes)**
This involves work with the whole class to refer back to learning objectives and success criteria, address misconceptions, identify progress, summarise key facts and ideas, clarify what needs to be remembered, make links in other work and discuss next steps in learning.

3.2 Teaching strategies

In order to provide pupils with active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- Activities are planned to encourage the full and active participation of all pupils.
- Teachers differentiate tasks throughout the lesson in order to meet the needs of all abilities.
- Teachers place a strong emphasis on correct use of mathematical language; this is supported by key vocabulary being displayed.
- Teachers value pupils' oral contributions and create an ethos in which all children feel they can contribute.
- Questioning

3.3 Curriculum Planning

The school's curriculum for mathematics for each year is published on the school website. It is based on the document - Mathematics programmes of study: key stages 1 and 2 National curriculum in England, September 2013. This is the statutory framework for Years 1, 3, 4 and 5 for September 2014 and for all year groups come September 2015. Years 2 and 6 currently follow the National Numeracy Strategy 1998.

Links and connections between the programmes of study, the class topic and real life contexts are made when class teachers plan the Creative Curriculum. This is medium term planning.

Short term planning

- A daily planning sheet is used by staff to plan learning over a series of lessons.
- These plans will include learning objectives, 'Must, Should, Could' differentiation, outline activities for the mental and oral starter, whole class teaching focus, guided group work, independent tasks, and resources to be used, key vocabulary, key questions and Assessment for Learning (AfL).
- Planning clearly shows which group the teacher will be focusing on each day and which group will be supported by the additional adults.
- Teachers highlight learning objectives from the programme of study once they have been taught.

The medium and short term planning is monitored by the maths subject leader and senior management team.

3.4 Teaching methods and approaches

In order to provide the children with active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- ICT is used where appropriate by teachers and pupils to support teaching and learning in Mathematics.
- Questioning

4. Assessment, recording and reporting

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

4.1 Day-to-day assessments (Formative)

As part of the ongoing teaching and learning process, teachers assess children's understanding, achievement and progress in mathematics. Assessment is based upon observation, questioning, informal testing and the marking and evaluation of work. This informs day to day teaching and learning and provides feedback to children. Pupils are also taught to assess and evaluate their own achievements by recognising successes, learning from their own mistakes and identifying areas for improvement.

4.2 Periodic assessments (Summative)

Teachers assess key ideas, End of Year Expectations, targets and areas of concern that have been covered during these units. Each teacher will undertake termly pupil progress meetings with the Assessment Co-ordinator to track children's progress and set targets.

4.3 Statutory assessments

These are carried out through compulsory National Curriculum mathematics tests for pupils in Years 2 and 6 and are reported to parents, the LEA and DFE.

5. Intervention programmes

A range of intervention programmes are used according to the needs of particular cohorts. These include Springboard and First Class @ Number and Numicon. These are used to support children who are at risk of not reaching age related expectations.

6. Equal Opportunities

All pupils will have equal opportunity to reach their full potential across the mathematics curriculum regardless of their race, gender, cultural background, ability or physical disability.

The school's equal opportunities policy applies to the teaching of mathematics as to all other subjects.

7. Environment

It is important that the classroom environment supports both the learning and teaching of mathematics. The school aims to provide a mathematically stimulating environment:

- Through the development and use of working walls to support learning and teaching in a lesson or series of lessons.
- Through interactive displays that promote mathematical thinking and discussion
- Through displays of pupils' work that celebrate achievement in mathematics.
- By providing a good range of resources for teacher and pupil use.
- Use of outdoor environment

In every classroom, resources such as number lines, hundred square, place value charts and multiplication squares are displayed as appropriate and used for whole class or individual work.

8. Home Learning

Cromer Road School recognises the value of the partnership between school-based learning and home-based learning. Children make greater achievement when they are supported by their home environment. Home Learning provides another valuable opportunity for parents and children to work together, enjoying shared learning experiences outside the school environment. Home Learning in Maths entails activities, tasks and games to consolidate, reinforce and understand the learning that has already taken place in school.

The purpose of Home Learning is to encourage children to develop personal study skills, to foster independence and to encourage children to assume individual responsibility for their own learning.

At the start of each term each class teacher will inform parents of the pattern and timing of home learning in a Curriculum letter which will also identify the areas of school-based learning to be covered.

The Government recommended the following amount of time should be spent on home-learning:

Early Years	10 minutes daily	Sharing books, talking about the day.
Years 1 / 2	1 hour per week	Reading/spelling and English work / number games .
Years 3 / 4	1½ hours per week	English, (including reading) and Mathematics with opportunities for topic based study and research.
Years 5 / 6	2½ hours per week	English, (including reading) and Mathematics with opportunities for more focused topic based research.

For further details, see the Home Learning policy.

The role of the mathematics Subject leader

The subject leader for mathematics:

- is an effective teacher of mathematics and has secure subject knowledge of the subject;
- is aware of current issues and developments in education;
- manages the mathematics budget and organises resources;
- monitors teaching and learning
- sets and monitors whole school targets;
- provides written policies and guidelines;
- manages the transition between Key Stages;
- leads staff development in mathematics;
- co-ordinates inclusive practices and ensures that the needs of all children are met;
- advises on assessment issues in mathematics;
- involves parents in their children's learning