



Scalford C of E Primary School

Maths Policy *2015*

‘In the heart of your community, a good school’

Created: March 2015

Signed: Chair of Governors..... Date

Signed: Headteacher

A rectangular box containing a handwritten signature in black ink. The signature appears to be 'M. A. Wang'.

To be reviewed on: March 2017

Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Scalford C of E Primary School. The school's policy for mathematics is based on The National Curriculum in England (2013). The implementation of this policy is the responsibility of all the teaching staff.

Maths at Scalford

Mathematics is a powerful tool for everyday life with great relevance in the real world. As we explore the world around us we are constantly being met by mathematical experiences and challenges. Mathematics is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems.

Although we recognise that all children come to school with some mathematical knowledge and understanding, this will be varied. We therefore carefully plan the experiences children will meet in school to ensure that all children are both challenged and gain a sense of achievement in the work they do.

Aims

It is our aim to enable our children to:

- develop a positive attitude towards mathematics and an awareness of the fascination of mathematics
- utilise the basic skills needed in order to be a numerate member of society
- have an ability to communicate mathematics and mathematically
- recognise and identify patterns and connections in their mathematical work
- have the ability to apply appropriate skills in order to solve problems, to reason, to think logically and to work systematically
- develop an understanding of mathematics through a process of enquiry and investigation
- use and apply mathematics in practical tasks, real life situations, across the curriculum and within mathematics itself
- be able to explain their thinking and give reasons for outcomes
- develop a range of mental and written strategies for working with number and solving mathematical problems
- use and understand a wide range of mathematical language
- develop an understanding of shape, space and measures and apply this knowledge in a range of purposeful contexts
- be able to access, represent, collect and interpret data
- use calculators, ICT tools and a variety of resources to aid mathematical learning
- use initiative and have an ability to work both independently and in co-operation with others

Objectives

We seek to meet our aims by:

- providing a broad and balanced mathematics programme throughout the school which follows the National Curriculum and ensures continuity and progression

- delivering the mathematics curriculum through a variety of teaching and learning styles in order to give children a broad experience through which they can extend, practise and develop their understanding and skills to the best of their own ability
- encouraging interest, enthusiasm, perseverance and confidence in mathematics giving children time to think, talk and be involved in their mathematical thinking
- exposing the children to a range of mathematical language during lessons
- setting challenges, investigations and problems for the children to use and apply the skills they have learnt
- allowing children to develop and share their methods of calculation, either mental or written, discussing and evaluating methods they use
- building in meaningful use of calculators and ICT to support their learning and understanding
- encouraging children to develop a variety of mental strategies of calculation
- making cross-curricular links where possible in order for children to apply their mathematical skills, knowledge and understanding

Early Years

Teachers support children in developing their understanding of mathematics in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. Teachers offer opportunities for these skills to be practised, in order to give children confidence and competence in their use. The mathematics includes seeking patterns, making connections, recognising relationships, working with numbers, shapes, space and measures, and counting, sorting and matching. Children use their knowledge and skills in these areas to solve problems, generate new questions and make connections across other Early Learning Goals. Mathematical understanding will be developed through stories, songs, games and imaginative play.

Lesson Structure

To provide adequate time for developing numeracy skills and mathematical thinking each class teacher will provide at least 5 mathematics lessons per week. These may vary in length but will usually last for about 45 to 60 minutes in KS1 and at a minimum of 60 minutes in KS2. Additional mathematics is taught within other subject lessons (e.g. Science, DT or Computing). Typical (but not all) lessons will comprise three elements, viz: mental/oral starter, main activity and plenary.

Mental/Oral Starter

This is whole class work which rehearses, sharpens and extends mental and oral skills through activities which are pacy and lively. These activities involve all pupils within the class.

Main Teaching Activity

The teacher will introduce the lesson objective through whole class input/ modelling. Pupils will then work either independently, in pairs or groups. Work during this part of the lesson is differentiated according to ability. The teacher uses their judgement in how to differentiate the activity so that all pupils are able to achieve the learning objective and usually a Learning Support Assistant will work with one group whilst the teacher oversees the remaining group(s).

Plenary

This part of the lesson draws together the learning that has taken place and can be done at any point as mini plenaries or it may be at the end of the lesson. It may act as a time to sort out misconceptions, identify progress and summarise the key facts, learning and ideas of the lesson. This part of the lesson is an ideal opportunity for the teacher to assess learning through questioning, self or peer assessment.

Staff use varied styles of teaching to address the needs of all learners. Lessons are planned to allow children sufficient time to apply their mathematical skills/thinking. Professional judgement is used to choose the most appropriate approach, depending on the activity, age and ability of the children concerned.

ICT is used in mathematical activities, where possible, to enhance mathematical learning and understanding.

Pupils are aware of all resources available to assist them in attaining the learning objective and reaching their full potential using their preferred style of learning.

Our children are encouraged to work both independently and co-operatively in pairs or in groups. Mathematical experience is also not confined to sitting at tables in the classroom but may take place in and around the school building and during educational visits.

Mental Calculations

Mental mathematics is fundamental to the development of mathematical thinking of the child; it enhances conceptual understanding and aids calculation. We therefore need to give children the skills and opportunities to develop their mathematical thinking mentally. Through mental mathematical activities teachers are able to assess more accurately the child's mathematical thinking and can therefore plan more effectively.

In teaching mental maths we need to ensure that children:

- have the opportunity to develop their mental skills before being introduced to formal written calculations
- use a range of mental calculation skills that they are able to record informally and formally, as well as describe what they did to reach an answer
- have opportunities to visualise and describe their visualisations
- understand and use a broad range of mathematical vocabulary
- understand that numbers make patterns and are controlled by rules
- can round numbers up/down
- understand the value of digits in numbers
- understand that there may be many ways of arriving at an answer
- have opportunities to develop their skills in mathematical calculation and recording their mathematical thinking

Written Calculations

Staff agree that mental calculations are crucial to mathematical thinking. Children are therefore encouraged to use mental strategies before resorting to written methods. Recording work may involve children making rough jottings first followed by recording actual answers for the teacher's attention. All children are encouraged to work tidily and neatly when recording their actual answers but jottings take different forms and are important evidence for the teacher. Children are encouraged to use the number line (numbered or empty) in written calculations as an informal strategy. Informal written strategies are used progressively throughout school prior to more formal and efficient methods being used. Staff introduce and use the calculation strategies appropriate to their year group by referring to the *Maths Calculations Policy*.

Continuity and Progression

The mathematical development of children varies considerably between individuals. Continuity and progression are a central part of planning, since they are concerned with the ways in which children's understanding builds and develops over time. Extra support using appropriate intervention programmes or target groups are used to enable all children to develop their basic skills in mathematics and reach their full mathematical potential.

Assessment

At Salford Primary School we recognise that assessment for learning lies at the heart of promoting learning and raising standards of attainment. The formative assessment procedures within our school encompass:

- making ongoing assessments through questioning, discussion and observations (these 'immediate' responses are mainly verbal and may not always be recorded)
- feedback in books is in response to the achievement of the learning objective or to correct any difficulties encountered
- self-assessment using the system of traffic lights or smiley faces
- use of a teacher's own test or activity designed to check understanding.

The summative assessment procedures encompass:

- a termly teacher assessment
- use of SATs and optional SATs papers
- teacher assessment levelling based on assessment criteria used in conjunction with the new National Curriculum

We recognise that systems over assessment are going through a period of change and we aim to adapt and update our assessment procedures as and when appropriate.

Resources

Resources are kept either in classrooms, in the stock cupboard or in the Resources Room. Many IT resources are now soft copy only and these are kept on the server. Staff also have access to online Hamilton Trust planning if required.

Special Needs

Within the mathematics lesson teachers and teaching assistants aim to provide activities to support children who find mathematics difficult. Children with SEN are taught within the mathematics lesson and are encouraged to take part when and where possible. Where applicable children's IEPs incorporate suitable objectives and teachers keep these objectives in mind when planning work and one to one interventions where necessary. Teachers also ensure that their planning caters for children who are registered as 'children with aptitude' with suitably challenging and extended activities.

Equal Opportunities

At Salford we are committed to, and believe it is important to provide, a range of mathematical experiences and activities to give all children every opportunity to achieve the highest of standards possible. We aim to promote the individuality of all children, irrespective of ethnicity, attainment, age, disability, gender or background to bring about positive social attitudes and respect for all. We also aim to reflect the diverse nature of our society within the curriculum, challenging stereotypical attitudes and any discrimination.

Homework – see *Homework Policy*

Role of the Co-ordinator – see *Co-ordinator Policy*

PML, March 2015