

MATHEMATICS POLICY DOCUMENT

MERCHANT TAYLORS' PRIMARY SCHOOL

INTRODUCTION

This document is a statement of the aims, objectives and strategies for the teaching of mathematics at Stanfield.

It was developed during the autumn of 2006 and revised in October 2009, 2015 and January 2016.

RATIONALE

Numeracy is a key life skill and the subject of mathematics provides children with a bank of knowledge to help them make sense of the world. Mathematics should provide children with the ability to tackle practical tasks and problems they may encounter in their everyday lives by analysing and communicating information.

AIMS

It is hoped that the children will:

- be challenged to think
- develop a real interest in mathematics
- become well-motivated
- develop an ability to use mathematics in other subjects
- become confident in the use of the calculator and computer
- gain a firm foundation for future study
- become proficient at applying mathematics to everyday life
- develop both independent and co-operative work habits
- become aware of the power and purpose of mathematics
- develop an ability to explain their reasoning and methods
- develop an ability to think precisely, logically and creatively
- become confident at mathematics
- recognise the progress they have made
- be exposed to different teaching approaches

FOUNDATION STAGE

Teachers in the Foundation Stage follow the Mathematics strand of the Early Years Foundation Stage (EYFS) Framework. Children must be supported in developing their understanding of Mathematics (Number and Shape, space and measure) in a broad range of contexts in which they can explore, enjoy learn, practise and talk about their developing understanding through adult led activities and child led activities.

They must be provided with opportunities to practise and extend their skills in these areas and to gain confidence and competence in their use. By the end of the EYFS, children should:-

- Count from 1 to 20
- Order numbers and say one more or one less than a given number
- Add and subtract two single digits
- Count on or back to find a final number
- Solve problems including doubling, halving and sharing
- Talk about size, weight, capacity, position, distance, time and money.
- Compare quantities and objects
- Recognise, create and describe patterns
- Explore characteristics of everyday objects and shapes and use mathematical language to describe them.

EQUALITY OF OPPORTUNITIES

Maths is planned to meet the varied needs of all learners, regardless of their gender, background, culture, physical or cognitive development. Learning objectives are set to meet these needs in line with our Special Needs, and Equality Policies.

TEACHING ALLOCATION

The mathematics curriculum at Stanfield is taught on a subject basis and work in mathematics is taught for a minimum of 5 hours per week. Reception to Year 3 are taught by their class teacher, whilst Years 4, 5 and 6 are set by ability. (Year 3 set spring and summer terms)

EQUIPMENT

All classrooms are equipped with interactive white boards, laptop and computer. Mathematical resources relevant for each set/year group are stored in individual classrooms.

TEACHING STRATEGIES

The daily mathematics lessons have a flexible three-part structure to include:

- an oral/mental starter
- a main teaching activity
- a plenary session

Mathematics lessons will give opportunities for:

- directed, active whole-class teaching
- demonstrating or modelling a strategy or skill using a wide variety of resources
- practical activities to provide a secure foundation and to enable children to move from concrete to abstract thinking
- illustrating and explaining - providing reasons and giving examples
- discussing and questioning using a range of questioning techniques

- practising, rehearsing and reinforcing particular skills
- activities that involve whole class practical participation
- a creative and flexible approach to problem solving and investigations
- evaluating children's responses and identifying misconceptions and misunderstandings
- summarising and reviewing the children's progress.

CROSS CURRICULAR LINKS

Fundamental British Values

Since November 2014, all schools have a responsibility to promote the 'fundamental British values' of democracy, the rule of law, individual liberty, mutual respect and tolerance of those with different faiths and beliefs. We aim to promote these values through our maths curriculum and our whole school ethos.

English Mathematics lessons can help develop literacy skills via the use of:

- counting rhymes
- sequencing events in stories
- use of correct mathematical vocabulary
- logical reasoning during discussion

Science Many opportunities will arise for:

- classifying
- sorting
- counting
- measuring
- calculating
- estimating
- recording
- interpreting data

Art/DT Through the use of:

- measurements
- sequencing
- shape
- space
- scale
- movement
- mathematical series eg Fibonacci, spirolaterals, parabolas etc.

IT Through:

- the collection and classification of data
- producing graphs and tables

Humanities Through:

- the collection and classification of data
- map studies making use of co-ordinates, angles, scales, negative numbers
- use of chronological time lines

- PE** Through:
- measurement of height, distance and time
 - counting
 - symmetry
 - movement/direction
 - position

- Music** Through:
- number rhymes and songs
 - counting
 - note values

SCHEMES OF WORK

A scheme of work, based on and extending beyond the 2014 NC requirements is used to provide a framework for teachers at MTPS. This is supported by a range of other materials which are taken from different sources.

The main scheme at KS1 is Collins

The main scheme used in KS2 is **Galore Park Mathematics**. Additional reinforcement and extension work is provided from the following sources:

Key Stage 1:

- Developing Numeracy – Using and Applying
Solving Problems
Mental Maths
Number and the Number System
Calculations
- Excellence in Maths - Number and the Number System
Calculations
Word Problems
Shape, Space and Measures
- Heinemann Maths Plus – Talking Maths
Group Work
- Can Do Problem Solving
- Maths made Easy
- CDRom-Number Crew
- Ginn Mental Maths
- Mental Maths- Anita Straker
- Abacus

Key Stage 2:

- www.mymaths.com
- Abacus 7
- Mental Maths- Anita straker
- Can Do Problem Solving
- Ginn Numeracy Maths Express

- Ginn Mathematics
- Steps Mathematics
- Bond Mathematics
- Excellence in Word Problems
- Apex Mathematics-extension for all through problem-solving
- Medal Maths

HOMEWORK

Homework is used to support the mathematics taught in lessons through specific tasks set by the teacher as reinforcement of work undertaken in lessons. It is also used to provide opportunities for practical problem solving and using and applying. Homework should show differentiation.

DIFFERENTIATION

- Years 4 to 6 are set for mathematics by ability. (Year 3 from Christmas)
- All pupils are given the opportunity to develop their understanding. There is help provided for children with specific learning difficulties from the learning support staff, and differentiated exercises within the classroom.
- Generally, no more than three levels of work will be offered to each year group but, at the teacher's discretion, further extension work could be given. Those children who are more or less able than the norm will be given an activity more appropriate to their ability, on a daily basis.
- All children will be provided with the opportunity for extension or reinforcement appropriate to their ability.
- Weekly maths clubs are held at Infant and Junior level to provide support and extension work for specially targeted children
- Differentiation will occur during lessons via:
 - a range of questioning techniques
 - a range of practical activities
 - written and recorded work
 - IT activities
 - homework tasks

ASSESSMENT AND RECORDING OF PUPILS' PROGRESS

Assessment will take place at 3 connecting levels for which records will be kept of results from the medium and long term assessments.

1. Short term

Informal part of every lesson to ensure children have grasped the main teaching points through:

- questioning
- observation
- oral work
- written work

2. Medium term

Recorded progress based on:

- End of term assessments (Juniors)
- Topic assessments/Check-ups

3. Long term

Pupils will be assessed through:

- External PUMA assessments - end of term and end of year

REPORTING TO PARENTS

Mathematical progression for each child will be reported to parents via:

- Parent/teacher interviews to be held in the autumn and spring terms
- An annual written report to parents in the summer term

MONITORING

Medium term plans are monitored online by the Maths Co-ordinators. Weekly plans are monitored by a member of SLMT. In the autumn, spring and summer terms a work audit is carried out. A work audit monitoring form is completed and feed back is given to staff as appropriate. Observations by the Maths Co-ordinators take place annually on a rolling programme.

LINKS WITH OTHER INSTITUTIONS

MTPS is a member of:

- The Mathematical Association
- Pupils are entered for both the Primary Maths Challenge and the UKMT Junior Challenge (aimed at years 7 and 8)

THE ROLE OF THE MATHEMATICS CO-ORDINATOR

The mathematics co-ordinator will:

- Be responsible for policy development throughout the school
- Monitor the mathematics curriculum throughout the school
- Monitor resources and be responsible for ordering new resources
- Keep up to date with developments in mathematics education and disseminate information to colleagues as appropriate
- Liaise with the mathematics departments in the Merchant Taylors' Boys' Junior School and Girls' Senior School

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