

# ALL SAINTS UPTON C.E. PRIMARY SCHOOL

## Policy for Mathematics

### Introduction:

- This document is a statement of the aims, principles and strategies for teaching and learning of mathematics at All Saints Upton C.E. Primary School
- It was developed during the summer of 2014 through a process of consultation with teaching staff.
- It was presented to the *Governing* body in Autumn 2015.
- This policy will be reviewed in Autumn 2016. A schedule for the review of this, and all other, policy documents is set out in the school's Development Plan.

### What is Mathematics?

- Mathematics is a body of knowledge, which provides a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems. Mathematics also provides the means for creating new imaginative worlds to explore and it is through this exploration that new mathematics is created and current ideas are modified and extended.

### Aims:

Our aims in teaching mathematics are that all children will:

- enjoy the subject and study it with confidence and a sense of achievement;
- achieve a high standard in numeracy and a range of other mathematical skills;
- make progress commensurate with their age and ability;
- apply these skills with confidence and understanding when solving problems.

### Principles of the Teaching and Learning of Mathematics:

Mathematics is important because:

- it is widely used in society, both in everyday situations and in the world of work;
- it can be used to represent or communicate ideas, to predict, to explain and to verify;
- it is interesting and enjoyable providing intellectual challenge and aesthetic pleasure.

Mathematics is a core subject in the National Curriculum. The fundamental skills, knowledge and concepts of the subject are set out in "Mathematics in the National Curriculum" where they are categorised into 4 strands:

1. Number - Number and Place value  
Addition and Subtraction  
Multiplication and Division  
Fractions;
2. Measurement;
3. Geometry - Properties of Shapes  
Position and Direction;
4. Statistics.

In addition, Year 6 study Ratio and Proportion and Algebra.

### **Strategies for the Teaching of Mathematics:**

The New National Curriculum for mathematics is the framework for the teaching of mathematics where the fundamental skills, knowledge and concepts described in the National Curriculum are organised progressively .

Progressive learning objectives based on the different strands of mathematics in the Primary Curriculum are used as the framework for teaching and learning. This is supported by materials from several commercially produced schemes of work and on line materials such as Abacus.

The Mathematics Curriculum is taught on a daily basis in dedicated lessons of depending on the year group.

Each lesson is loosely organised into four parts and enhanced with mini plenaries where appropriate. The basic four parts are:

1. A 'Problem' which puts the lesson into context and provides relevance to what they are learning and which the children then explore;
2. A structuring of the problem and different methods of approaching it;
3. A reflection of what has been learnt and development of the teaching focus;
4. An opportunity to practice and apply the learning objective.

These four parts provide opportunities for:

- the use of mental mathematics involving quick recall of simple mathematical facts;

- demonstration, explanation and instruction by the teacher to the whole class, groups or individuals;
- whole class and group discussions and co-operative group work;
- practical activities to introduce concepts and to provide meaningful context;
- practical activities to consolidate skills which have been learned;
- visual representation of abstract problems;
- problem solving and investigational activities;
- assessing developing knowledge and skills against the set objectives.

Opportunities are built in to other curricular areas to use mathematical skills, such as taking accurate measurements in science or collecting and presenting data, and to promote mathematics in the wider context in order to allow the children to appreciate its relevance.

Calculators are used in upper KS2 to enable children to become familiar with the display of digital numbers and as a means of exploring number. They are also used as a tool for calculating with real data. They are not a substitute for pencil and paper or mental methods of calculation, which are also widely practised and can be seen in the written calculation policy. Children will be taught to recognise the appropriateness of when to use a calculator. However, work involving calculators will no longer form part of the statutory assessment process

#### Foundation Stage:

At the Foundation Stage, a mental starter and short class lesson are carried out each day. One or two groups are focussed upon each day whilst the other children are engaged in a variety of tasks. At the end of the session, children are once again brought together for a short review time. Towards the end of the year, children begin to take part in a full mathematics session in Reception if appropriate for their age and maturity.

There is no specialist teaching in mathematics; it is taught by class teachers.

#### Special Needs:

Children with special needs receive support through differentiation and /or outcome.

The school also provides pupils experiencing difficulties with numbers and the number system a program of intervention provided by a specifically trained TA.

Pupils with particular ability and flair for mathematics who are working at or above the expected standard are enabled to develop deeper learning through opportunities to apply and communicate through problem solving and investigations. Additional support provided by our local Secondary Schools is accessed whenever possible.

On occasions, when deemed necessary by the class teacher and after discussion with the head, parents and the child, pupils may work with the year group above or below their chronological age. This is generally reserved for those children experiencing considerable difficulty or those considered gifted in areas of mathematics.

Homework is regularly used to support mathematics. This usually takes the form of particular learning objectives being shared with the parents for the children to practice at home linked with recommended activities/online games to support their learning.

### **Strategies for Ensuring Progress and Continuity:**

Planning in Mathematics is a process in which all teachers are involved wherein:

- The foundation for curricular planning is the School Development Plan, developed through a process of collaboration between staff, and approved by governors.
- Medium term plans are drawn up every half term.
- Weekly plans based on medium term plans, are drawn up by individual teachers and monitored by the Headteacher and Subject Leader.
- Extra mathematical activities integrated with the Key Stage theme are developed by class teachers.
- Staff meetings are used to discuss the mathematics curriculum and ensure consistency of approach and standards.

### **The role of the Subject Leader is to:**

- Take the lead in policy development and the production of schemes of work designed to ensure progression and continuity in mathematics throughout the school.
- Monitor children's knowledge and understanding of the subject by annual surveys, pupil interviews, etc.
- Support colleagues in their development of detailed work plans and implementation of the scheme of work and in assessment and record keeping activities.
- Monitor progress in mathematics and advise the Headteacher on action needed.
- Take responsibility for the purchase of major mathematical resources which are to be shared by all staff.
- Keep up to date with developments in mathematics education and disseminate information to colleagues as appropriate.
- Engage the wider community with mathematical activities to keep the subject profile buoyant.

## **Feedback to pupils**

Feedback to pupils about their own progress in mathematics is achieved through discussion with pupils and marking of work. Effective marking:

- aims to be encouraging and supportive;
- will include written comments where appropriate;
- is often done while a task is being carried out through discussion between child and teacher;
- may occasionally be done by pupils marking their own work, although this is not the regular pattern.
- Allows the children opportunity to respond with correction and additional challenges.
- Follows the School's Marking Policy.

## **Formative Assessment**

This is used to guide the progress of individual pupils in mathematics. It involves identifying each child's progress in each aspect of the subject, determining what each child has learned and what therefore should be the next stage in his/her learning. Formative assessment is usually carried out informally by teachers in the course of their teaching. Suitable tasks for assessment include:

1. small group discussion perhaps in the context of a practical task;
2. short tests in which the teacher gives questions orally and pupils write answers;
3. specific assignments for individual pupils;
4. individual discussions in which children are encouraged to appraise their own work and progress.

## **Strategies for Reporting and Recording:**

- Assessment of children's achievement for each half term are recorded by individual teachers to inform future planning.
- Achievement is also recorded to provide the opportunity to identify children below the expected standard to be targeted for extra support.
- Assessments against New Curriculum learning objectives are recorded in the pupils Assertive Mentoring Files.

## **Reporting to Parents**

This is done twice yearly through interviews and annually through a written report. Reporting in mathematics will focus on each child's:

- attitudes to mathematics;
- competence in basic skills;

- ability to apply mathematical knowledge to new situations.

### **Formal Summative Assessment**

This is carried out at the end of Y2, Y3, Y4, Y5 and Y6 through teacher assessment. Statutory and optional tests may be used to inform teacher assessment.

The achievement of Reception children in mathematics is assessed on entry to school and throughout the year using observations of planned activities and this is assessed against the Development Matters statements.

Class teachers will submit an overall mathematics level each term to the HT.

### **Strategies for the Use of Resources:**

Classroom resources for mathematics include:

- a set of equipment for measuring and data handling activities;
- equipment for exploring shape and space;
- a variety of equipment for work on number such as number lines and hundred squares;
- mathematical games and puzzles;
- Interactive whiteboard programs to support learning such as Activ primary and Espresso.

Centrally stored resources for mathematics are the responsibility of the Subject leader in consultation with KS Co-ordinators and are predominantly stored in the Y3 stock cupboard. They include:

- extra calculators;
- specialist resources likely to be used by all classes occasionally (enrichment activities for the more able pupils, generally investigational in nature.)

I.C.T. including interactive whiteboards, is a major resource, which is used in mathematics for:

- data handling (use of databases, spreadsheets and graph drawing packages)
- modelling (logo activities);
- practice of basic skills in a game context for individual pupils who are in need of special support or motivation;
- problem solving and investigational activities.

### **Health & safety issues in mathematics include:**

- instruction being given for the safe handling and use of some apparatus such as scissors and compasses;
- use of aprons for messy work;
- close supervision of all cooking activities by an adult.

### **Equalities Act:**

This policy has been considered under the Equalities Act 2010, giving due regard to the three principles;

- Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this act;
- Advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;
- Foster good relations between persons who share a relevant protected characteristic, and persons who do not share it.

We are committed to:

Eliminating discrimination and harassment  
Promoting equality of opportunity  
Promoting good relations and positive attitudes towards all people  
Encouraging participation in public life.

Our commitment covers equality on grounds of: age, disability, gender (including Trans-gender), race, religion/belief and sexual orientation.

### **Appendices may include;**

- lists of centrally held mathematics resources;
- lists of available reference books for teachers on the teaching of mathematics;
- blanks of weekly planning sheets;
- progressive mathematics criteria;  
examples of assertive mentoring assessment systems

Signed

Chair of Standards Committee

Date

## **Appendix 1:**

### ***Singapore Maths Pilot***

For the Academic year 2015-2016 Key stage 1 will be joining the Pilot for the teaching of 'Singapore Maths'.

This will include training via Wade Deacon for HT, Key Stage 1 teachers and TA's involved with the teaching of Maths in KS1, including bespoke training within the classrooms for each Year group.

There is a significant cost to the programme so progress will be carefully monitored by the Subject Co-ordinator and SLT and reported to the GB Standards Committee as appropriate.