



Stanton Bridge Primary School

Footballer



Police Man



Teacher



Doctor



Mathematics Policy 2017

## Contents

Rationale

Aims and Objectives

Teaching and Learning

Planning

Differentiation

Assessment

Intervention

Environment

Homework

99 Club

Monitoring and Review

Roles and Responsibilities of a subject co-ordinator

Appendix

## Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them.

As a primary school it is very important to create an agreed whole school approach of which staff, children, parents, governors and other agencies have a clear understanding. This policy is the formal statement of intent for mathematics. It reflects the essential part that mathematics plays in the education of our pupils. It is important that a positive attitude towards mathematics is encouraged amongst all our pupils in order to foster self-confidence and a sense of achievement. The policy also facilitates how we, as a school, meet the legal requirements of recent Education Acts and National Curriculum Requirements.

## Aims and Objectives

Mathematics is a life skill. It is an essential element of communication, widely used in society, both in everyday situations and in the world of work.

Our aims and objectives in teaching mathematics are:

- To equip pupils with competence and confidence in mathematical knowledge, concepts and skills to become numerate and fluent in their ability to apply their mathematical knowledge and understanding.
- To develop their ability to solve problems, to reason, to think logically, reason and to work systematically and accurately applying mathematical skills with confidence and understanding.
- To enable pupils to express themselves and their ideas using the language of mathematics with assurance.
- To develop positive attitudes to mathematics, recognising that mathematics can be both useful and enjoyable.
- To nurture a fascination and excitement of mathematics
- To be able to use and apply the skills in other curricular areas and an ability to use and apply mathematics in real life situations
- To develop children's use of initiative and an ability to work both independently and in cooperation with others
- To develop an understanding of mathematics through a process of enquiry and experiment

## Teaching and Learning

### Organisation

- A daily mathematics lesson of 45 – 60 minutes is taught in Year 1 – 6.
- EYFS is being used for children at the foundation stage. At this stage pupils experience mathematics on a daily basis. This early introduction to mathematics will generally be undertaken orally and often to secure knowledge of basic number facts and skills. Opportunities for mathematics should be developed through daily routines and all areas of learning.
- The skills acquired in the numeracy lesson are applied across the curriculum using our creative curriculum.

A typical 45 – 60 minute lesson in Year 1 – 6 will be structured like this:

Approx time		
5 to 10 minutes	Oral work and mental calculation	This will involve whole-class work to Rehearse, Recall, Refresh, Refine, Read, Reason mental and oral skills.
30 to 40 minutes	Main teaching activity	This will include 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.
10 to 15 minutes	Plenary	This will involve work with the whole class to refer back to Learning objective and success criteria, address misconceptions, identify progress, to summarise key facts and ideas, clarify what needs to be remembered, to make links in other work and to discuss next steps in learning.

## Teaching strategies

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.
- Wherever possible practical 'real' activities are used to introduce concepts and reinforce learning objectives.
- Opportunities to transfer skills learnt, to real situations, are used whenever possible.
- 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.
- Teachers plan activities designed to promote thinking skills and problem solving.

## Teaching methods and approaches

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

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- The school has agreed a presentation policy for mathematics, including books and number formation.
- A Calculation Policy has been agreed. The mental and written methods taught are exemplified in the Calculation Policy documentation.
- ICT is used where appropriate by teachers and pupils to support teaching and learning in Mathematics.

## Planning

Teachers will follow the National Curriculum 2014 guidelines for teaching mathematics. Medium Terms plans are provided by the Maths co-ordinator in agreement with the school and ensure coverage of all areas of mathematics required by the national guidelines.

Teachers plan on weekly planning grids using the Medium Term plans as guidance. Resources for the support of teaching mathematics are provided for staff in a known, central location.

### Differentiation

This should be incorporated into all mathematics lessons and can be done in various ways:

- Stepped Activities which can be accessed at different steps, supporting and challenging all.
- Common Tasks which are open ended activities/investigations where differentiation is by outcome.
- Resourcing which provides a variety of resources depending on abilities eg. counters, cubes, 100 squares, number lines, mirrors.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme and usually at no more than three levels.
- Children with SEN are normally taught within the daily mathematics .
- When additional support staff are available to support groups or individual children they may withdraw small groups or individuals acting on advice from the class teacher.
- Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult, but also activities that provide appropriate challenges for children who are high achievers in mathematics.

### Assessment

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.

#### **Day-to-day assessments**

As part of the ongoing teaching and learning process, teachers will assess children's understanding, achievement and progress in mathematics.

Assessment may be based upon observation, questioning, informal testing and the marking and evaluation of work. This will inform day to day teaching and learning and provide feedback to children. Marking will follow the school policy and teachers will allow time for children to respond to marking and feedback as appropriate.

Learners will also be taught to assess and evaluate their own achievements by recognising successes, learning from their own mistakes and identifying areas for improvement.

Teaching staff use the assessment targets agreed by the school to assess children on a day to day basis and to ensure progression is made.

### **Half Termly assessments**

These take place half termly and teachers will use Rising Stars Optional Tests, NFER and PUMA assessments using guidelines given by Senior Leaders and as is stated in the Assessment Policy.

Years 2 and 6 will use examples of SATs style assessments where appropriate.

Teachers assess key ideas and concepts; identify areas for further development and misconceptions. The results of these assessments will also be used alongside teacher assessment as a monitoring tool for children's progress towards their end of year expectations.

The outcomes of short and medium term assessments will be recorded on a class record sheet and will be used to inform further planning or to identify where support is needed for individual or groups of children.

### **End of Year Assessments**

These assessments are carried out towards the end of the school year to assess and review pupils' progress and attainment. This enables attainment to be tracked year on year and will inform groupings and intervention programmes.

These are made through compulsory National Curriculum mathematics tests for pupils in Years 2 and 6 (following National directives) and supplemented by Rising stars, exam Ninja and CGP tests and practise papers deemed appropriate by the maths leader. Teachers also draw upon their class records of attainment, teacher assessments and supplementary notes and knowledge about their class to produce a summative record. Accurate information is then reported to parents and the child's next teacher.

### **Prior Knowledge Assessments (PKA's)**

PKA's will be conducted as per guidelines given by the maths leader at the beginning and end of each mathematical topic taught using the Rising Stars Progress Tests. These tests are designed to be used as an assessment for learning tool, enabling teachers to provide accurate targets for pupils.

### **Must, Should, Could Targets.**

Taken from the national curriculum end of year attainment objectives; Must, Should, Could targets are designed to emphasise key concepts within the curriculum. Creating a focus for these objectives highlights their importance to pupils and in doing so creates opportunity for further development and embedding within their knowledge. Following guidance provided, teachers will allow 3 mental/oral sessions per week to the teaching and learning of

curricular targets and pupils will progress towards meeting each target over the academic year. Progress will be recorded and monitored by the maths leader.

### Intervention programmes

Assessment and monitoring procedures are used to identify children whom need intervention in the area of mathematics. Identified children are grouped for small group or one to one support from staff within school. Staff giving support and intervention use 'Big Maths' as a method of assessment and teaching throughout their sessions. They use the agreed school targets alongside. Starting levels are assessed and then monitored as a tool to assess progress and identify areas in the child's knowledge to be developed.

### 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
- By providing a good range of resources for teacher and pupil use.

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.

### Home Learning

We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics.

Homework provides opportunities for children

- to practise and consolidate their skills and knowledge,
- to develop and extend their techniques and strategies
- to share their mathematical work with their family
- to prepare for their future learning.

Children in Key stage one and two are expected to complete homework in guidance with the Homework Policy. This can be using an online system or through workbooks and paper documents.

See **Homework** policy for further details



## 99 club

99 club is a system designed in agreement with the school to allow children the opportunity to develop their times tables skills. Resources are provided for children to access different ways of learning and practising times table skills. Half termly assessments are made by teachers and certificates and badges given as a reward.

## Monitoring and Review

Books.

Books will be monitored half termly by the Senior Leadership team following a evaluation proforma. Staff will be informed as to the expectations and criteria to be monitored before scrutinies take place. Feedback and advice will be given along with support where needed.

Planning.

Planning will be monitored weekly by the Senior Leadership team following a scrutiny proforma. Staff will be informed as to the expectations and criteria to be monitored and given weekly feedback and areas for development. Support will be given as needed.

Teaching and Learning.

Teaching and Learning will be monitored formally on a termly basis, using a proforma agreed by the school. Teachers will be made aware of the criteria and monitoring process in advance time agreed by the Senior Leadership Team. Feedback and support will be given as needed. Informal 'drop in' sessions will be made throughout the term time and additional support will be arranged with staff as required.

## Role of the subject Leader

- To take the lead in policy development
- To support colleagues.
- To monitor progress in Mathematics – eg leading staff CPD, scrutiny of work, analysis of formal assessment data.
- To take responsibility for the choice, purchase and organisation of central resources for Mathematics, in consultation with colleagues.
- To liaise with other members of staff to form a coherent and progressive scheme of work which ensures both experience of, and capability in, Mathematics.

- To be familiar with current thinking concerning the teaching of Mathematics, and to disseminate information to colleagues.
- The co-ordinator will be responsible to the Head teacher and will liaise with the named link Governors