

MAPLE SCHOOL

MATHS POLICY

**Updated June 2015 by Rachel de la Croix
(Maths Co-ordinator)**

School Vision

A high-quality mathematics education 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. (National Curriculum 2014)

At Maple Primary School all of our children are given the opportunity to develop their mathematical potential through a rich, engaging curriculum. We want our children to feel confident in using and applying mathematics in a wide range of situations.

We believe that mathematics is uniquely powerful in helping us to make sense of, and describe, our world and in enabling us to solve problems.

It is a fascinating subject, dealing with the nature of number, space, pattern and relationships. Useful and creative, it requires not only facts and skills, but also understanding gained through exploration, application and discussion.

In mathematics we aim to develop lively, enquiring minds encouraging pupils to become self motivated, confident and capable in order to solve problems that will become an integral part of their future.

Aims

The purpose of mathematics education is to offer pupils intellectual excitement and challenge; to provide them with a sense of delight and wonder; to equip them with knowledge and skills and the ability and confidence to use and apply these to meet the needs of present and future society. Maple Primary School aims to ensure that all pupils, irrespective of gender, race and culture, have access to a wide range of stimulating problems and activities which will include the appropriate Programmes of Study of the National Curriculum 2014 and the EYFS curriculum. As they move from home into school and from primary into secondary education their mathematical experience should be continuous and progressive producing competent and confident young mathematicians.

We ensure that the statutory requirements of the National Curriculum 2014 are met and so too are their aims:

- To become fluent in the fundamentals of mathematics
- Reason mathematically
- Solve problems

Outcomes

Our pupils will learn to:

- Develop the appropriate mathematical language associated with number, shape and position;
- Use and apply mathematics in practical tasks, in real life problems and in acquiring further knowledge, skills and understanding in the subject itself;
- Understand and use the four operations of number in relevant contexts;
- Understand relationships between numbers, learn basic number facts and develop a range of computational methods;
- Understand place value in our counting system and understand how it can be extended into numbers below zero;
- Use their mathematical skills in simple problem solving;
- Collect, interpret and represent data in tabular, graphical and diagrammatic form;
- Develop mental methods of calculation;
- Recognise, describe and represent shapes and patterns in terms of their properties, location and movement;
- Measure quantities including length, area, volume/capacity, angle, temperature, time and mass;
- By the time children reach Year 6 they will be introduced to ratio/ proportion and language of algebra as a means for solving a variety of problems.

We will judge the success of our mathematical teaching by:-

- The motivation and interest displayed by our pupils
- End of KS1 and KS2 National Curriculum Test results
- Success in meeting targets
- Data analysis (Target Tracker)
- Book and planning scrutiny
- Observations of the teaching of mathematics

Teaching and Learning

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. Pupils should experience a range of practical and written activities on number, measurement, geometry and statistics.

All class teachers follow and plan from the 'online' Abacus Maths planning resources (Activelearn.co.uk) agreed by the whole teaching staff based upon the National Curriculum Programmes of Study 2014 and the EYFS. Our Long and Medium term planning is informed by these documents which map out the mathematics curriculum for each year group. We then develop weekly and daily plans which give specific detail of learning objectives and appropriate differentiated activities. Support teachers and TAs are timetabled for each class and included in teachers written planning.

Classrooms should be rich in discussion between pupils and between teacher and pupils. Some facts will need to be memorised, others will need to be practised but underpinning all of this will be the development of mathematical reasoning and understanding through exploration, problem solving and investigation.

We aim to teach Maths using a wide range of strategies: direction, demonstration, modelling, explanation to clarify and discuss, questioning, initiating and guiding exploration, investigating ideas, discussing and arguing listening and responding and practice and consolidation, including links to other curriculum areas and real life situations.

Mathematics is taught for 45-60 minute in KS1 and 1 hour in KS2 per day

In the Foundation classes mathematics teaching is taught through some discrete lessons, spread throughout the day and integrated within other areas of learning in the classroom aiming for a similar lesson structure as KS1 by the end of the Foundation year.

The pupils in each year group in KS1 and KS2 are taught in mixed ability classes and are provided with differentiated activities to ensure tasks are set according to their individual levels.

We aim to actively engage pupils in their learning by sharing lesson objectives and 'Steps to success' (success criteria) with them. These are referred to during and at the end of each lesson. Key Stage 2 teachers are encouraged to help the pupils generate the 'Steps to success' for themselves where possible.

Teachers in all classes are actively encouraged to plan in regular opportunities for pupils to develop mathematical fluency in the recall of key number facts (including Times table facts).

Weekly opportunities for Times-Table practise and assessment across the school are as follows:-

Y1- Y4:- Use of the 'Big Maths- Beat That' tests.

Y5: Use of 'Tables Torture' tests.

Pupils in Y1-Y6 are also supported in their development of competent methods of mental calculation through the regular use of the Heineman '**Mental Arithmetic books**'. Teachers are asked to plan a 20/30 minutes session a week for these books to be used.

Cross Curricular Links

Mathematics is an integral part of our daily lives and therefore manifests itself in many areas of the curriculum. Teachers are encouraged to find appropriate opportunities to make meaningful links with other curriculum areas possible. Links with Computing are continually developed through use of laptops, iPads and appropriate software.

Assessment, Marking, Recording and Reporting

Marking

Marking is carried out in accordance with the school's Marking Policy with and reference to the lesson's 'Learning objective' and 'Steps in learning'. Teachers use marking to inform their future planning.

Errors are corrected in a positive light: as an opportunity **for** and an essential aid **to** learning. Pupils may be also involved in marking their own or their peer's work where appropriate.

The age, ability and level of self-esteem of the child and the learning objective of the task are taken into account when marking. Number and computational work is always marked. Children's answers are on the whole right or wrong and they are marked accordingly.

In KS1 and KS2 specific targets for individual children are given in the form of 'Next Steps' (NS). These are recorded in children's books. 'Next Steps' show children where to go next with their learning. Pupils are encouraged to correct answers that have been 'highlighted' through the class teacher's marking and respond to 'Next step' marking. Time will be allocated for this by the class teacher.

Pupils are also asked to respond to and evaluate their own success against the lesson's Learning Objective using the traffic light system (Red/ Amber/Green) at the bottom of their work.

Assessment

Assessment for Maths is carried out in accordance with the school's Assessment Policy.

Individual's progress is monitored and recorded through the Herts for Learning Pupils Progress Tracker programme.

Yearly Formal Assessments are carried out in the Summer term:-

- Foundation Stage Profile and Baseline assessments in Reception class
- Teacher Assessments in Y2 (National Curriculum Tests)
- External assessments in Y3, Y4 and Y5
- National Curriculum Tests in Y6

Opportunities for assessments in Maths are integrated into termly and weekly plans.

In Year 1- Year 5 children are assessed in Maths using a range of half termly tests (Linked to the Abacus Maths scheme) designated as appropriate to test individual pupils, groups or a whole class on an individual or range of attainments.

Information from these tests will be recorded by the class teacher and can be tracked over the year using the '**ActiveLearn**' website. This will be used to help inform future planning, and to identify children for intervention and support.

In the EYFS, pupils will be assessed and the Foundation Stage Profile completed throughout the year.

The Class Teacher, Assessment Co-ordinator, Mathematics Co-ordinator, SENDCo, Head Teacher keep records of assessments.

Parent's consultations are held in the Autumn and Spring terms, where class teachers discuss children's targets and progress in mathematics. A mid-year report for Maths and Literacy is shared with parents at the February consultation evening, pupils achievements and areas for focus are detailed within this.

In accordance with statutory requirements an Annual Report is sent to parents towards the end of the Summer Term. This report covers progress and achievements in mathematics, setting targets for future improvement and includes the level achieved in the National Curriculum Tests for Y2 and Year 6.

Presentation of Work

Children's maths work may be presented in a variety of ways including:

- On individual white boards or number fans
- In books
- In folders
- As part of an individual/paired/group presentation.
- As part of a class/school project.
- As a model
- As part of a classroom/school interactive display
- Through ICT
- In an assembly/class performance
- As photographs i.e. of mathematical displays.

All pupils in KS1 and KS2 use a pencil for mathematical calculations and squared exercise books to aid setting out of calculations.

From Year 2, Term 3, when recording on paper or in books the children will write the short date (DD/MM/YY), and a succinct Learning Objective at the start of a new piece of work.

When using squared paper the progression in the size of squared paper/books used is as follows:-

Year 1- 20mm

Y2 ,Y3 and Y4 -10mm

Y5 and Y6 -7mm

Pupils are taught suitable setting out of work. On starting new work , pupils in KS2, pupils /teachers in KS1 will rule off the last piece of work and date the next piece. The date is recorded in figures e.g. 23.11.15 . Margins are used in KS2.

Management and Co- Ordination

The Maths co-ordinator will:

- Evaluate data; identify strengths and weaknesses and plan accordingly in consultation with the Headteacher
- Annually review the SEF and update the SDP
- Conduct pupil voice interviews, feeding back to the staff as appropriate
- Attend INSET and disseminate information to staff.
- Review school practice in the light of new initiatives
- Implement appropriate changes in school in consultation with Headteacher
- Oversee the implementation of the requirements for the Maths curriculum
- Monitor and assist in developing skills and knowledge of the whole staff using: INSET and professional discussions.
- Undertake regular monitoring of written plans; regular work sampling
- Undertake lesson observations and feedback to colleagues and Headteacher
- Support Class Teachers and TAs in the planning for Early Morning Maths groups.
- Support the 'Numicon' trained TA in planning for and running the support group.
- Monitor the successfulness of support groups (EM Maths and Numicon group)

- Monitor example of pupils' work in open ended investigations/ problem solving activities across the whole school.
- To develop a school portfolio of pupils' work across the Keystages.
- Organise, maintain and monitor the use of resources, including I.C.T.
- Meet regularly and with liaison with the School Governor for Maths.
- Arrange liaison with outside consultants
- Update the policy document and schemes of work as necessary
- Provide workshops for parents.

Homestudy

Weekly homework activities are set in Y1-Y6.

In the FS: A practical task will be suggested for pupils to complete at home.(as appropriate)

In Y1 and Y2 classes: Weekly activities are set, linked to current class work. A balance between 'online' My Maths tasks, practical activities and more pencil/paper practise.

In Lower KS2 Classes: 'Online' 'MyMaths' tasks set weekly

In Upper KS2 Classes: 'Online' 'Mathletics' tasks set weekly

Resources

Pupils should engage in activities from a variety of sources - practical apparatus, worksheets, text books and the environment. Through regular and frequent access to computers and iPads they will experience the fascination of mathematical exploration and investigation. They should also have the power to solve real and challenging problems.

Everyday essential and year group specific maths equipment is stored within each classroom and it is the responsibility of the class teacher. All classes have access to a wide variety of equipment including, Multilink, Unifix, Numicon, Place value equipment, number lines, bead strings, hundred squares and rulers. Pupils are encouraged to select suitable resources which are relevant to their work, take care of and return them.

All teachers and classes have access to the Abacus Maths scheme materials and resources (physical and Online resources)

Every classroom has an IWB, 3 Networked computers and access to the set of laptops and Ipads.

Heinemann 'Mental Maths books' for use in Y1-Y6 are kept in The Maths co-ordinator's classroom cupboard.

Additional equipment for specific use is kept in the labelled boxes in the Resources Room (A list of the Resources kept in the Resources Room is attached to this Policy).

Interventions

Interventions are provided to boost children's progression in maths and are tightly planned, with success criteria set and assessments made frequently to ensure progress is being made.

Interventions are carried out mostly by our Teaching Assistants however it is the responsibility of the teacher to decide how it is planned and delivered. Communication is paramount to ensure the intervention is being carried out correctly and effectively.

Data analysis taken from AM7 and evidence from Class teacher's ongoing assessment are used to identify children who require additional support in specific areas in Maths.

Currently, we offer additional maths intervention resources through:

- Y2-Y6: Early Morning Maths sessions (2 sessions per week) in Autumn, Spring and Summer Terms.
- Numicon support Group : Y1/Y2 pupils (2 sessions per week for a 12 week period)

There are also opportunities for Gifted and Talented children within Maple Primary.

- In classes Y2-Y5, the Early Morning sessions are focused on extending ' more-able' pupils in these classes in the Summer Term.
- An extension class for the most-able Year 6 pupils (3 lessons a week) is taught by a specialist teacher.
- Occasional days for 'more-able' pupils, organised by our local secondary schools and within our local school's partnership.

Evaluation

The Mathematics Policy and the Calculations Policy which supports it, will be reflected in our practice. This will be monitored and evaluated by the Head Teacher, the Senior Leadership Team and the Maths Co-ordinator in the form of lesson observations, discussion and regular scrutiny of planning and of pupil's work.

Inclusion

In accordance with the Maple Equality Policy, teachers organise and plan activities so that all children, irrespective of ethnicity, culture, gender, ability and social circumstance have access to the curriculum. Teachers discuss and refer children to INCO and IEPs are put in place as appropriate.

Materials are modified if necessary.

Outside agencies are involved when necessary.

SEN resources are available to support the development of Maths skills.

Detailed analysis of test results in order to support individuals and targeted groups.

The Hearing Impaired Unit adapts and differentiates objectives and tasks as appropriate.