



**Rowanfield
Infant School**

Where our little gems come to shine

MATHS POLICY

Approved by Full Governing Body – March 2015

Signature_____

Review date: March 2016

Review Committee:

Post Holder responsible

ROWANFIELD INFANT SCHOOL
MATHEMATICS POLICY

RATIONALE

Mathematics teaches how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand appreciate relationships and patterns in their every day lives.

What is Mathematics?

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solutions to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. A high quality mathematics education therefore 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)

AIMS

The aims of mathematics at our school are:

- To promote enjoyment and enthusiasm for learning through practical activities, exploration and discussion
- To promote confidence and competence with numbers and the number system
- To develop the ability to solve problems through decision –making and reasoning in a range of contexts
- To develop a practical understanding of the ways in which information is gathered and presented
- To explore the features of space and shape, and developing a measuring skill in a range of contexts
- To understand the importance of mathematics in every day life.

OBJECTIVES

Our principal objective is to develop children's knowledge, skills and understanding in mathematics. We do this through;

- a daily lesson that has whole – class and group teaching and encourages the children to ask mathematical questions as well as answer them;
- providing the children with the opportunity to use a wide range of resources such as number lines, number squares, digit cards, small apparatus, ICT and the outdoor environment to support their work;
- providing the children with access to data handling programmes to record and interpret information gathered;

- our weekly plans, giving details of main teaching objectives for each focus of work. We use Assessing Pupil Progress (APP) to inform planning. Our teaching is assessment led, working on what our pupils need linked to APP. We provide suitable learning opportunities for all children, by matching the challenge of the task to the ability of the child;
- giving the children the opportunity to use resources and activities to develop an understanding of shape space and measures;
- encouraging the children to use and apply their learning in everyday situations.
- inviting parents to maths workshops and meetings to inform them of mathematics at our school, and welcoming them to visit lessons.

MATHEMATICS CURRICULUM PLANNING

Mathematics is a core subject in the National Curriculum. To become proficient mathematicians, all pupils are entitled to mathematical provision that matches their levels of development and personal needs.

All classrooms should;

- have a dedicated mathematics lesson daily
- have a daily basic skills activity session
- provide a stimulating environment
- have a good variety of resources, easily accessible to pupils

All teachers should ensure;

- AfL (Assessment for Learning) strategies are embedded in all aspects of learning and teaching.
- they teach specific basic number skills
- mathematics is enjoyable and fun and taught creatively
- they involve pupils in self assessment and peer assessment
- they act as a good role model.

Mental Maths Skills

Our school uses Maths Passports to engage pupils and parents with developing their mental maths skills. We have twelve passports progressing in quick recall maths skills. Children have maths targets in each passport and must show evidence of achieving them three times before moving on. Regular practice of these targets is planned into lessons and parents are informed of their child's targets. Certificates are used to celebrate success in celebration assembly before children receive their next passport of targets.

The Foundation Stage

- We relate the mathematical aspects of the children's work objectives set out in the Early Years Foundation Stage, which underpin the curriculum planning for children aged two to five.

- Staff follow our school agreed Foundation Stage Calculation Policy
- ‘Magic maths’ sessions are planned to teach key learning areas of Mathematics.
- We give the children ample opportunity to develop their understanding of number, measures pattern, shape and space through varied activities that allow them to explore, practise and talk confidently about mathematics.
- The outdoor learning environment is used daily as we believe learning outside the classroom is invaluable and essential to learning. It allows children to see the world which is beyond the classroom – a world which many of the children, in our society today, will never have the opportunity to experience. It is our role as teachers to then utilise places, other than the classroom, to stimulate, inspire and enhance learning. Links need to be made between real life and school to give learning a sense of purpose and a need for children to achieve. We give most consideration to what children are actually learning – the learning objectives, however it is just as important to give thought to where children learn and how children learn.
- Whole school number formation rhymes are used by all staff and shared with parents.

At Key Stage 1

- We implement the statutory requirements of the programme of study for mathematics. Our curriculum is assessment led and based on children’s needs and is adapted daily, responding to children’s identified next steps.
- We carry out the curriculum planning in mathematics in three phases (long term, medium term and short term). The Primary National Curriculum 2014 gives a detailed outline of what we teach long term and the yearly teaching programme identifies the key objectives, in each year.
- We teach children in classes so abilities are mixed but teaching and learning is suited to the children’s needs in Year 1 and Year 2.
- We ensure an appropriate balance and distribution of work across each term.
- Problem solving skills are taught so pupils develop higher order skills in becoming confident mathematicians.
- Individual maths targets are used to extend each child’s learning within their year groups.
- The class teacher completes the weekly plans in outline for the teaching of mathematics. These plans list the specific learning objectives for each lesson taught.
- Follow the school agreed Calculation Policy for KS1.
- Children are set a weekly homework task in order to strengthen their learning in mathematics. This task directly links with the current unit of learning and is differentiated for each maths group.
- At certain times of the year, whole school, Key stage 1, or year groups may work on curricular targets to revise or reinforce a number strategy.
- A maths intervention programme can be used to support some children in KS1 called ‘In Gloucestershire Children Count’ which is very successful in

identifying pupil's gaps in their mathematical understanding and addressing them.

- Mathematics is cross curricular and skills are used in other curriculum subjects linked to topics.
- Children have opportunities to feedback on their learning throughout the lesson using their differentiated rainbow steps and motivate and sparkle comments. Sparkle time is used to respond to marking so pupils can improve their learning.

CONTRIBUTION OF MATHEMATICS TO TEACHING IN OTHER CURRICULUM AREAS

Within English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Within Science

During science lessons, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on measuring cylinders, weighing scales and a variety of other instruments.

Within computing and ICT

Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Children also use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. They use simulations to identify patterns and relationships. Maths games websites are used at home and in school to reinforce maths teaching.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. We present children with real-life situations in their work on the spending of money.

TEACHING AND LEARNING STYLE

Our school uses a variety of teaching styles to cater for the variety of learning styles of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group direct teaching. During these lessons we encourage children to ask as well as answer mathematical

questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Mathematical dictionaries are available in all classrooms. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work and in other lessons by organising the children to work in pairs on open-ended problems or games. An ability to calculate mentally lies at the heart of numeracy; therefore, it is important to emphasise mental methods from the early years. Written methods are also important at this stage; however, starting from the mental calculations will enhance imagery and the mathematical thought process. Written calculations are taught in accordance with the calculations policy. We encourage problem solving using an online tool called ‘Stops Problem Solving’ where we teach children the eight problem solving approaches they can apply to different situations.

ENTITLEMENT/EQUAL OPPORTUNITIES

At Rowanfield Infant School we have a policy of inclusion. All children have equal opportunity to access the Maths Curriculum. All children are able to work at a level appropriate to them, thus ensuring progression and differentiation. Resources will be made available to suit the needs of all pupils. We teach mathematics to all children whatever their ability. We provide learning opportunities that are matched to the needs of children with learning difficulties. For pupils with Special Educational Needs and or Disability, learning is matched to the targets set for individual children in their My Plans, and My Plan+s and parents are informed.

ASSESSMENT AND RECORDING

As a self evaluating school, we use many monitoring and evaluating approaches to diagnose strengths and weaknesses thus contributing to the cycle of improvements. We draw on a wealth of information from inspection reports and reviews etc. Mathematics is assessed informally and formally. A clear record of each child’s progress is recorded throughout the year at termly pupil progress meetings where staff use their evidence to update trackers showing progress and discuss the use of appropriate interventions. Staff also engage in professional development aimed at raising attainment through focused teaching activities and interventions.

- In the Early Years Foundation Stage, staff use an online tracker called ‘School Pupil Tracker Online’ to monitor children’s progress throughout the year but end of year results are recorded using the terms Emerging Expected, and Exceeding in line with the Early Years Foundation Stage Profile Early Learning Goals.
- In KS1, staff also use ‘School Pupil Tracker Online’ to assess children’s progress regularly for Maths which breaks down the National Curriculum assessment focuses into steps. Pupil progress is tracked and staff can clearly

see how children are progressing and where interventions and challenge are needed.

- Short-term assessments are closely matched to teaching objectives, to help us adjust our daily plans and teachers annotate and adapt teaching daily.
- Medium-term assessments are used to measure progress against key objectives, and help us to plan the next unit of work.
- Long-term assessments are made towards the end of the school year, with the help of the national tests for Year 2 children, and the teacher assessment. We use these to assess progress against school and national targets. We can then set mathematics targets for the next school year.
- We share mathematical attainment and progress with parents in the end of year report but also update parents at structured conversation meetings throughout the year.

Monitoring and review

Monitoring of the standards of the children's work and the quality of teaching is the responsibility of the Maths Subject Leader, Senior Leadership Team and Governing Body. The work of the Subject Leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject and providing a strategic lead and direction for the school. The Head Teacher and the Subject Leader discuss the strengths and the weaknesses of the subject and indicate the area for further improvement. The Head Teacher will also allocate management time for the Subject Leader so that she/he can review samples of children's work and undertake lesson observations across the school. A named member of the governing body is briefed to oversee the teaching of mathematics.

- The Early Years Foundation Stage evidence is used to aid planning and teaching.
- Key Stage 1 results are analysed to identify strengths and areas for improvement in teaching and learning.

School results at the end of Key Stage 1 are compared with both local and national results to judge effectiveness of teaching and learning in mathematics at Rowanfield Infant School.

ROLES AND RESPONSIBILITIES

Head Teacher

- Provide sufficient time and resources to support the Subject Leader including non-contact time.
- Monitor teaching and learning in maths and include this within the School Improvement Plan and Monitoring and Evaluation Review.
- Oversee monitoring of standards in maths including shared lesson observations with the Subject Leader
- Review weekly planning in conjunction with the Subject Leader.

Subject Leader

- Oversee the implementation of maths throughout the school.

- Monitor standards by observing teaching, work and planning sampling, discussion with staff and pupils.
- Audit and update resources as the budget allows.
- Liaise with the Maths Governor.
- Develop and write the Maths policy as well as calculation policies.
- Work alongside the SLT to analyse data to inform planning.
- Liaise within the school and with partner schools to support staff development in maths by sharing expertise using external links, maths consultants, leading maths teachers etc.
- Liaise with the ICT Subject Leader to provide support in the development of Maths and ICT.
- Write the Mathematics section of the annual School Improvement Plan.
- Liaise with the Early Years Leader

Inclusion Leader

- Provide strategies and resources to support maths teaching for individual children or groups in relation to My Plans or My Plan+s

Teaching Assistants

- Support individual children/small groups of children under the direction of the class teacher within the daily maths lesson
- Target specific learning objectives for specific children (identified target group)
- Give effective feedback to pupils about their next steps in maths
- Support My Plan targets for children with special educational needs/disability

Mathematics Governor

- Evaluate the implementation and effectiveness of the maths action plan.
- A yearly visit to observe and work within the classes
- Feedback to the governing body on the development of maths across the school each year

LINKS WITH KEY STAGE 2

Progression and continuity across key stages is monitored. The Maths Subject Leader liaises with Rowanfield Junior School Maths Subject Leader and a written method calculation progression is held in common. Maths assessment information is passed on to Year 3 teachers so they can continue the pupil's progress in maths from current attainment.

The school's mathematics policy is reviewed in line with school improvement plan priorities and to take account of changes in local and national policy.

A mathematics action plan is drawn up at the end of each year. The action plan is shared with both staff and the Standards and Inclusion Governors and forms part of the School Improvement Plan.

Jill Proctor
Mathematics Subject Leader
11th February 2015