



# Bowling Green Primary School

## Mathematics Policy 2014



### Introduction:

At Bowling Green Primary School we aim to inspire all children to reach their full academic potential in mathematics. This means ensuring a curriculum that is fully inclusive of all children which:

- Develops children's knowledge and understanding of mathematical concepts whilst enabling them to practice and secure skills and methods;
- Enables them to think critically and communicate their understanding;
- Gives them opportunities to apply learnt mathematical skills in different contexts across the curriculum;
- Provides opportunities to develop problem solving skills useful for maths and across the curriculum.

To ensure this, our mathematics policy is set within the context of the school's vision, aims and policy on teaching and learning. As a result, children will be able to apply their learning in mathematics and problem solving across the curriculum and children will:

- Be prepared for applying their skills effectively in everyday life situations; in their future learning and in the work place.
- To have a solid mathematical foundation to lead onto secondary, further and higher education.

Through teaching with a problem solving approach, children will learn to understand, distil and clarify information; consider what they know that will help them to solve problems, realising what they need to know next; create systems and strategies, organising information in a way that helps find patterns and ultimately solutions and to communicate and present their findings effectively.

### Planning:

The teachers at Bowling Green, draw upon their excellent subject knowledge, planning astutely; setting challenging tasks based on an accurate assessment of pupils' prior skills, knowledge and understanding. They use well-judged and often imaginative teaching strategies to engage and inspire learners. To ensure that teachers are covering all statutory aspects of the curriculum they use the National Curriculum Programmes of Study alongside Abacus Evolve. (See Outline of Statutory Requirements for Years 1 -6)

Mathematics is an interconnected subject in which pupils need to be able to move fluently and where pupils should be able to apply their mathematical knowledge to science and other subjects. The programmes of study are, by necessity, organised by a year group basis and the expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding through additional practise, before moving on.

- Planning begins from a thorough understanding of children's needs gleaned through effective and rigorous assessment and tracking, combined with high expectations and ambition for all children to achieve.
- Medium term planning will outline the areas of mathematics that will be taught during the term to ensure coverage of the National Curriculum.
- Within short term planning, clear success criteria for each learning objective taught should be created – demonstrating the progression needed to reach and exceed the objective. This will enable the class teacher to follow a clear and systematic teaching sequence, where input and activities are differentiated by considering which parts of the success criteria individual children are ready for.
- Planning, where possible, should involve real life contexts for maths, where children are problem solving with a purpose in mind.
- There should be a whole class investigation planned at least once per half term to practise different elements of problem solving, including: finding all possibilities, logic problems, finding rules and describing patterns, diagram/visual problems and exploring different aspects of number.
- Class teachers should regularly plan for opportunities for children to apply their maths skills to different problems within maths lessons and across the curriculum. This will also allow children to revisit, practice and consolidate different areas of maths and apply them within different contexts.

**Teaching:**

In the Foundation Stage, children are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through a combination of short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration. Children will become very competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. Counting forwards and backwards in many different sized steps as well as from different starting and ending points is essential.

Maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations.

Children should be encouraged at all times to communicate their understanding of maths so that it clarifies their thoughts.

- Children's mental maths is of great importance, with number bonds, times tables facts and various strategies for calculation taught and practised at school with support sought from parents through homework activities.
- A progression towards efficient written calculations should be developed and applied consistently in each year-group. The school's Calculation Policy should be followed.
- Class targets should be used to ensure areas where the majority of the class have not grasped a concept can be revisited and mastered.
- Though the nature of lessons will be very different depending on the needs of the class, children should be: active; practising skills they haven't yet mastered (perhaps recapping on class targets); learning something new OR learning to apply their knowledge to different contexts. They should be: 'doing' very quickly; working at a good pace and being productive; sharing their thoughts and methods and being successful.
- When teaching problem solving skills across the curriculum, teachers should ensure that children get thorough practise at: 'preparing for problem solving', 'thinking through problems to establish what they know and don't know so far'; actually 'doing the problem solving' effectively AND 'communicating the answer effectively'. They should evaluate the process too. Over time children will improve at each aspect.

**Progression of calculation**

We have a policy for progression in calculation to ensure continuity and consistency throughout the school. (See calculation policy)

**Assessment:**

Assessment for learning should occur throughout the entire maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular. On a daily basis children should self-assess against the learning objective and success criteria, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too.

- Pupils' work should be marked in line with the Marking Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.
- Future lesson design should depend on class success evaluated through marking and observations made during the lesson.
- Assessment of pupil work and progress is ongoing by the class teacher and informs future planning. Teachers mark work in mathematics in line with the school marking policy. Teachers use this information to inform planning for groups and individual pupils.
- Summative assessments are made at least once per half term in order to provide further understanding of the level a child is working at and to inform a more rounded judgement of their abilities.
- Tracking is used in order that children who are not making good progress over time can be targeted for support in one form or another. What that support will and how intensive, depends upon the child's needs and it may be a simple strategy within whole class teaching that is needed.

**Formal Assessments**

Year 2 and Year 6 complete the national SATs for mathematics in the summer term. Years 3, 4 and 5 also complete the optional SATs to support teacher's assessments.

### **Reporting to parents**

- Parents receive an annual report indicating pupils' achievement at the end of the Summer term.
- Parents are invited to a consultation evening during the Autumn and Spring term.
- Parents receive a termly Progress Chart, reporting on their child's progress during the term against their own personal target and against National expectations.
- At the end of the school year, parents of our Reception children (FS2 children) receive their child's Foundation Stage Profile results and Learning Journey, showing progress throughout their time in the Foundation Stage Unit. Parents of Year 2 and 6 pupils receive their child's SATs results.

### **Differentiation and support, including support for SEN.**

This is incorporated into all mathematics lessons and is done in various ways, for all pupils including those who are lower and higher achieving:

- Setting appropriately challenging tasks based on systematic, accurate assessment of pupils' prior skills, knowledge and understanding
- Ensuring that marking and constructive feedback is frequent and of a consistently high quality enabling pupils to understand how to improve their work; children must be given time to respond to feedback
- Open ended activities/investigations where differentiation is by outcome.
- Providing a variety of resources depending on abilities eg: Counters, cubes, 100 squares, number lines, mirrors
- Support from teacher or TA in class, annotated on planning
- Learner-centred intervention programmes which are delivered by TAs and designed by the class teacher, mathematics coordinator or MAST teacher.

We aim to provide children who are not making good progress, with extra support through interventions. Interventions in maths should be based on developing key number skills that are appropriate for the children involved. Intervention provided to boost children's progression in maths should be tightly planned, with success criteria set and assessments made frequently to ensure progress is being made.

### **Display and Resources:**

- In the classrooms there should be, either on display or easily accessible to children, level appropriate resources, particularly concrete and pictorial apparatus to support children to grasp concepts.
- Mathematical vocabulary should be displayed so that children use this in the communication of their understanding.
- There should be maths work on display in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children.

### **Monitoring**

Monitoring of children's progress begins with performance review meetings but continues with the subject leader evaluating further evidence to ensure children are making progress. This monitoring happens through examination of work in books, pupil interviews, analysis of assessment results and the assessments used.

Following monitoring activities, feedback is given to staff about how they can strengthen their practice and CPD (professional development) opportunities built in where it would be deemed valuable. These might take the shape of inputs during staff meetings or by a variety of other means.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject leader in order to evaluate their impact. Findings are reported to the headteacher and governors through use of the 'Subject Leader's Ongoing Report'.

### **Staff Continued Professional Development**

The subject leader for mathematics will deliver any new information or advice to staff at planned staff meetings. Through performance management, staff have the opportunity to identify areas of need and appropriate training is arranged. Staff meetings also provide staff information and training such as: numicon training and 'An awareness of Dyscalculia'.

**Parents and Homework**

We recognise that parents make a significant difference to children’s progress in maths and encourage this partnership. It is our school policy to provide parents and carers with opportunities to work with their children at home ensuring that they follow the schools calculation policy. These activities may only be brief, but are valuable in promoting children’s learning in mathematics. Activities may take the form of number games and tasks with some formal exercises for older children. We understand they may not all be familiar to you and therefore if you need any further support or explanation please speak to your child’s teacher. Workshops for parents will also be made available throughout the year to ensure a school to home continuity.

**Other policies and documents to be read in conjunction with the Maths Policy:**

- Calculation policy
- Outline of Statutory Requirements in Mathematics for Years 1 - 6
- Homework Policy

Updated by W Thompson July 2014

**APPROVED BY THE GOVERNING BODY ON .....**

SIGNED ..... (Chairperson of the Governing Body)