

# Broadwood Primary School



## Mathematics Policy

December 2019



*The only way to learn mathematics is to do mathematics*

*Paul Halmos*

## Our Vision for Mathematics

It is extremely important to us that all children develop a love of mathematics. Our learning environment enables children to flourish, develop confidence and a 'can do' attitude. It is essential children understand the value of mathematics and its purpose in the real world. Our curriculum is designed to enable children to make connections and apply their mathematics in context, developing transferable skills across all areas of the curriculum. It would be fantastic if all children left Broadwood primary school as confident problem solvers, pattern sniffers and collaborators, demonstrating skills such as resilience, articulation and reasoning. We will never give up on any child and believe all children have the ability to be successful mathematicians.

## Our key aims

Our curriculum is designed to meet the requirements of the 2014 curriculum which aims to ensure all pupils:

- Become fluent in the fundamentals of mathematics so that they are efficient in using and selecting the appropriate written algorithms and mental methods, underpinned by mathematical concepts
- Can solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- Can reason mathematically by following a line of enquiry and develop and present a justification, including in unfamiliar mathematical language.

## Principles

### ***Planning:***

- Planning begins from an understanding of children's needs gleaned through effective assessment and tracking, combined with high expectations and ambition for all children to achieve.
- Medium term plans will be created in the form of an 'S' plan, where staff carefully map out the small steps of progression within a topic thinking carefully about the needs of every learner and how to move them on effectively in their learning.
- Short term planning will demonstrate in greater detail the learning steps needed in order to meet the overall objective and demonstrate a systematic teaching sequence, where input and activities are tailored to the needs of the children.
- Planning, where possible, should involve real life contexts and varied opportunities to apply their knowledge, skills and understanding,

### ***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 – including continuous provision both inside and outside the classroom.
- Systems are in place to ensure children secure appropriate basic skills 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 should build from a concrete understanding of concepts where children are manipulating objects across the entire school. 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.
- Progression towards efficient written calculations should be developed and applied consistently in each year-group following the school Calculation Policy.
- Class targets should be used to ensure areas where the majority of the class have not grasped a concept can be revisited and mastered. Individual targets should be used to ensure groups of children can be targeted effectively for support.
- 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 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, children be given opportunities to practise; ‘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.

### Assessment:

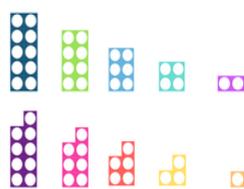
- Assessment for learning should occur throughout the maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.
- Pupil's work should be marked in line with the Marking Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods. At the beginning of each lesson time should be given for pupils to reflect on marking and comments on the previous day's work.
- Future lesson design should depend on class success evaluated through marking and observations made during the lesson.
- Summative assessments are made at least once per 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 be and how intensive, depends upon the child's needs and it may be a simple strategy within whole class teaching that is needed.

### Display and Resources:

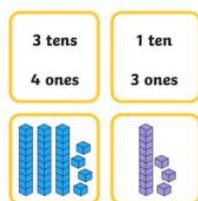
- In classrooms there should be, either on display or easily accessible to children, level appropriate resources, particularly concrete and pictorial apparatus to support children to grasp concepts.
- Mathematical vocabulary should be displayed so that children use this in the communication of their 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.

Some resources we use:

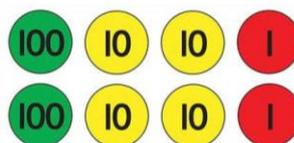
Numicon



Dienes



Place Value Counters



Cuisenaire Rods



## **Tracking and Intervention**

At Broadwood, we track children regularly to ensure they are making good progress. If they begin to fall behind, we provide additional support in class to ensure children secure gaps in their learning. We pay particular attention to specific groups of children to ensure they are all being supported and challenged and making good progress.

There may be occasions where interventions are put in place bespoke to the needs of a particular child, group of children which may be delivered by a teaching assistant. However, it is the class teacher's responsibility to oversee this intervention and communicate effectively with the teaching assistant.

## **Monitoring**

Monitoring happens through book looks, lesson observations, learning walks, data analysis and more importantly discussions with children.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject lead in order to evaluate their impact. Findings are reported to the head teacher and governors.

## **Parents and Homework**

Parents are informed of personal targets at parent appointments and offered advice on practical ideas/websites to support their children further in their maths learning.

All children from year 2 upwards have a personal account to access Times Tables Rockstars and are regularly tested.

Homework is given at the beginning of each projects which include a range of maths tasks to work on during the term.

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

Calculation policy

National Curriculum 2014

Marking Policy

SEN Policy