

# Flanderwell Primary School

## Mathematics Policy

*October 2017*

### Introduction

This policy outlines how mathematics is planned, taught, assessed and managed at Flanderwell Primary School. The implementation of this policy is the responsibility of all the teaching staff with the aim of ensuring quality first teaching based on effective teacher assessment.

### Curriculum Planning

The school is following the New National Curriculum objectives for maths. The school uses the Abacus scheme for Years 1 to 6 to plan high quality, differentiated and interactive lessons, which exposes children to challenging work for the year group they are working within. Teachers need to use assessment information to enable them to effectively adapt lesson plans to meet the needs of the children in the class they teach. Teachers should ensure that all groups of learners are appropriately challenged to enable them to make good progress in every lesson. Children should be introduced to a progressive range of models and images to support them with understanding the concepts of different operations. Children are given the opportunity to visually communicate their mathematical reasoning and understanding. Mental and written strategies, for each year group are taught in accordance with the school's **Calculation Policy**.

At Flanderwell Primary School, we have six key principles which contribute to our schools mathematical approach:

- Teachers and children believe everyone can learn at high levels.
- Maths is visual and full of models and images.
- The mathematical environment is filled with wonder and curiosity.
- Communications and connections with previous learning and real life contexts are valued. Talk for maths is invited.
- Maths is open, where creativity is valued.
- The classroom is a risk taking, mistake valuing environment. This is supported through high quality maths areas in the classroom, including working walls and maths help desks in every room.

### Arithmetic

From Years 1-6, teachers should plan weekly opportunities for children to complete an arithmetic activity, using the Rising Stars Arithmetic scheme. This works on a two week cycle of prepare then test and review with the children, as outlined in the introduction of the booklet. This is to enable children to become familiar with the time format and context. Teachers should ensure math warm up activities allow children to have opportunities to revisit misconceptions and develop relevant skills to enable them to be successful.

Children should also have a mental maths test each week, where children have been given this challenge as homework. E.g. questions on a particular times table, or number bonds, doubles or halving; as appropriate for the ability of that group of learners.

### Fluency in maths

As part of the Abacus scheme in KS2, weekly plans provide links to fluency fitness and quick maths activities. Teachers should ensure they provide daily opportunities outside the maths lesson for children to complete these quick tasks. The aim is that children have regular opportunities to practise and develop skills across a range of familiar contexts.

In KS1, as part of the Abacus scheme, five minute fillers are provided and these should be used daily, outside of the maths lesson.

Where needed, teachers should use these opportunities for SEN children to have 5 minutes to work with a teaching assistant towards individual maths targets, to ensure their needs are also met.

### Maths challenge

Each week teachers will plan a problem solving lesson as part of a whole school approach called maths challenge. Children have a special maths challenge book to record their work. Teachers are encouraged to use a range of resources, including STOPS problem solving, Nrich and Challenges for More Able Pupils, to plan problem solving lessons which encourage mathematical thinking and reasoning. During a lesson, all children should access the same mathematical problem which has been appropriately differentiated or resourced for different ability groups, where appropriate. Teachers should provide children with a range of approaches to tackle problem solving. This includes scaffolding the problem solving process through modelled examples of a similar problem, or by allowing children to decide how to approach the problem and guiding through mini plenaries.

As part of our new, refined and developed problem solving approach, each class will focus on a particular problem solving skill for a period of weeks to ensure it becomes embedded. There is a consistent language across the school of these problem solving skills:

Act it out, trial and error (with awareness that this is not the most efficient), trial and improvement, making a list or table, finding a pattern, simplifying and working backwards.

### Known number facts

In Year 1, children will have regular opportunities to rehearse number bond facts for 10 and 20. As they achieve with this, bronze, silver and gold badge rewards are provided.

In Years 2-6, children are given a weekly times tables test. This focusses on rapid recall of times tables facts.

Children are tracked individually for their rapid recall at bronze, silver and gold level. A gold "I know my... times tables" badge is awarded when that times table has been mastered.

Times tables trackers follow children through school to enable progression and gaps to be quickly filled.

Children who meet their year groups times tables target completely, are rewarded by placing their name on a trophy card for the whole school to see on a celebration display in the corridor.

Year 2 – 2x, 5x, 10x

Year 3 – those from the previous year and to include 3x, 4x and 8x

Year 4 – All times tables up to 12x

Year 5 and 6 – practise, consolidate and revisit

### Confidence in maths

Teachers should ensure that once a week they identify a maths star as part of the star of the day whole school reward system. This is to encourage confidence and celebrate mathematical success.

### Homework

All children in each class are assigned to Active Learn. This relates to the Abacus scheme of work and what has / is being taught by teachers. It is differentiated so teachers can allocate appropriate level games to children. Children have their own log in details to access their own account from home. Teachers should also plan time for children to access this during school time, especially for those who may not have access to the Internet at home. For example, this could be on a rotation system for children to use class based computers during assembly time.

Teachers in both Key Stage One and Key Stage Two should send home a maths homework sheet, in homework books, weekly.

### ***Long Term Planning***

Long term overviews of different units are provided for each year group to ensure all of the strands are covered and revisited with progression.

### ***Medium Term Planning***

Abacus breaks down this long term plan which teachers can download and edit to identify what they are teaching in certain weeks.

### ***Weekly planning***

Teachers are expected to plan by downloading and editing the weekly plan format from the abacus scheme. Consideration must be given to the main teaching, taking into account teachers' professional knowledge of good practice and what works well. Teachers may indicate on planning children

who exceeded or not achieved expectations and make necessary amendments according to their assessments. Weekly planning should be a working document, adapted based on identifying the children's needs. Weekly planning *might* show which group the teacher plans to focus on each day, however sometimes teachers choose to note this daily depending on their assessments of pupil progress.

## **Teaching**

### ***Teaching time***

To provide adequate time for developing numeracy skills, each class teacher provides a daily mathematics lesson. This may vary in length but will usually last between 45 - 60 minutes. Mathematics is also taught daily within the Early Years Foundation Stage, however session times vary depending on the provision.

### ***Lesson content***

Lessons contain a balance of whole-class teaching, guided group work and independent practice. Wherever possible lessons have a practical element and make use of models and images to support learning. Teachers provide opportunities for pupil dialogue and make learning purposeful i.e. using and applying skills in problem solving. Extensions and challenges to broaden children's use of skills are available to all children who have mastered a concept to deepen their understanding.

Teachers ensure that the learning intention for the lesson is shared with the children and referred to throughout. Children are involved in assessment and are regularly asked to comment on their learning. Children are able to use power purple pen to respond to ways forward from their teacher.

In the Early Years Foundation Stage, discrete whole class sessions still take place. This is then followed up with a combination of guided group and independent sessions to access to vehicles for learning.

### ***Mathematics across the curriculum***

Mathematics contributes to many subjects within the Primary Curriculum and opportunities are sought to draw mathematical experience out of a wide range of activities in order to allow children to begin to use and apply mathematics in real contexts. These opportunities are identified in Medium Term Planning but additional opportunities are taken as and when they occur.

### ***Pupils records of their work***

In order to collect sufficient levels of evidence to inform assessments, children should record work in maths books. In Year One, this evidence may be in children's numeracy folders. Rough jottings, photocopies of whiteboards and

photographs often form part of this written evidence. All work should be dated and marked in accordance to the learning objective. Children should have opportunities to see feedback in maths and where appropriate, given time to respond to feedback or ways forward.

## **Inclusion**

### ***More able pupils***

Where possible more able pupils are taught with their own class and stretched through differentiated group work and extra challenges. When working with the whole class, teachers direct some questions towards the more able to maintain their involvement. Exceptionally gifted children are provided with more challenging contexts to apply their secure knowledge of an objective.

### ***Pupils with SEN***

Teachers aim to include all pupils fully in their daily mathematics lessons by means of appropriate differentiation. This may also include early intervention to enable children to keep up to the best of their ability.

### ***Marking***

In line with the school's marking policy, every piece of written work in mathematics books is marked. If children have taken part in a guided session where the teacher has given detailed verbal feedback, this is indicated in children's books and work is not formerly marked.

## **Assessment**

Teacher's record pupils progress using O-track. Sources of evidence may include oral questioning, observation, pupil-teacher dialogue, children's work and assessment activity outcomes. Tests form part of this but **are not be the sole basis for levelling**. Children will sit an optional SAT paper for their year group.

At the end of each half term, children use the Abacus half termly tests.

At the end of Summer 2, before final assessments, children should sit the other optional SAT paper from Test Base, for their year group.

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