



# St William's Catholic Primary School

## Mathematics Policy



At St William's Catholic Primary School our core values underpin every aspect of school life.

### Mission Statement:

*"By following Jesus' example, standing side by side,  
we will nurture each other to fulfil our hopes and dreams."*

### THE AIMS OF THE SCHOOL:

Develop trusting relationships  
Respect, love and forgive all  
Encourage curiosity and confidence  
Aspire to be the best we can be  
Make a difference working together

At St. William's Primary school, we believe that a high quality Maths education provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject. We strive to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.

## Aims

Our school curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations and developing an argument, justification or proof using mathematical language.
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

# Approach to Maths Teaching

At St. Williams, we believe that all children have the potential to become 'able' mathematicians and teach in effective ways to enable every child to succeed.

We follow a mastery approach to teaching and learning.

We aim to embed a deep understanding of maths by employing a concrete, pictorial, abstract approach - using objects and pictures before numbers and symbols so that pupils understand what they are doing rather than just learning to repeat routines without grasping what is happening.

The concrete - pictorial - abstract approach is based on research by psychologist Jerome Bruner, who suggests that there are three steps (or representations) necessary for pupils to develop understanding of a concept. Reinforcement is achieved by going back and forth between these representations.

## Concrete representation

**The active stage** - a child is first introduced to an idea or a skill through the use of real life or mathematical objects. It is important for children to use a wide range of concrete resources as this 'hands on' approach is the foundation for conceptual understanding. Examples of resources include real life objects like sweets, straws, pencils etc ; base 10; numicon; bead strings; counters; cubes.

## Pictorial representations

**The iconic stage** - a child has sufficiently understood the hand-on experiences performed and can now relate them to representations such as diagrams or pictures. These are used to represent numbers and symbols. Examples of pictorial representations include: number lines, 100 square, place value grid, bar method, drawing of concrete representations.

## Abstract representation

**The symbolic stage** - with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

# Planning

We use the White Rose Maths Hub materials for our long and medium term planning.

## Long Term Planning

There is a termly overview for each year group from Year 1 to Year 6. Each term is split into twelve weeks. These overviews are designed to support a mastery approach to teaching and learning and support the aims and objectives of the 2014 National Curriculum. The overviews have number at their heart.

The long term plan provides a guide to the appropriate time allocated to the different areas of maths and should not be stuck to rigidly. Teachers should use their professional judgement and on-going assessments to inform and adapt their planning as and when appropriate.

## Medium Term Planning

The White Rose Term by Term Objectives plan outlines all of the National Curriculum objectives that should be taught during each topic. The objectives outlined in the medium term planning should directly inform the short term planning.

## Short Term Planning

Daily lesson plans should identify the purpose of the lesson - teach/practice/apply/assess and the content of the lesson should reflect this.

The learning objective should be presented in the style of a learning challenge - 'Can I ...' It should be concise and clearly explain what the children are learning. The objective should be derived from the medium term planning in line with the Primary Curriculum for mathematics 2014.

Plans should clearly state how children will meet the learning objective at the active, iconic and abstract stage and resources listed.

Short term planning should be progressive, ensuring fluency and providing opportunities for reasoning and problem solving.

The purpose and objective of the lesson should be based on the teacher's ongoing assessment and should be adjusted whenever necessary to ensure progress.

## Maths in the Early Years

Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. EYFS planning is based on Development Matters and the Early Learning Goals (Number, Shape Space & Measure). EYFS planning is based on the medium term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next.

## **Assessment and tracking**

Teachers will assess children's work daily to ensure learning and teaching is adjusted for the needs of the children. Unit assessment grids form the basis of regular assessment. This formative assessment provides evidence for a termly review of the child's attainment and progress. This means that the children's progress is continually and accurately being reviewed against National Curriculum expectations across all of the attainment targets.

The White Rose termly assessments will be used to support teachers' judgments.

NFER assessments will be administered three times per year in years 3-5. These will provide a maths age for each child and provide additional evidence of progress.

The Sandwell Early Numeracy Test will be used to obtain a maths age for children in Year 1 and 2

### **Target setting**

Each child is set individual targets, as appropriate, and progress towards them is regularly assessed.

## **Maths and inclusion**

At our school, we teach maths to all children, whatever their ability and individual needs. Through our Maths teaching, we provide learning opportunities that enable all children to reach their full potential.

As part of our vision to enable each child to reach their full potential, children who, through teachers' ongoing assessment, are considered at risk of not achieving their target will take part in maths interventions. These will take place in addition to the daily maths lesson. Interventions include First Class Number 1, First Class Number 2, Number sense and Numicon 'Breaking the barriers'.

When appropriate, all children are exposed to their year group expectations. However, when progress falls significantly outside the expected range, the child may have special educational needs. In this instance, the child will be taught in the same way from the year group objectives appropriate to the particular child.

## **Monitoring and Review**

The quality of teaching and learning in Maths is monitored and evaluated by the subject leader, SLT and Governors as part of the school's agreed cycle of lesson observations, book scrutiny, pupil voice and learning walks.

