

St Catherine's Catholic Primary School

"Loving and Learning Together as Jesus taught us"



Calculation Policy

Date of policy review: October 2023

Next review: October 2025

Policy Reviewed & Passed by the Governors

Key Person Responsible: Maureen Kelly

This Calculation Policy has been written with the aims of the National Curriculum at the heart of it. The calculation policy shows the White Rose progression in calculation (addition, subtraction, multiplication and division) and how this works in line with the National Curriculum.

National Curriculum Aims

The national 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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

At St Catherine's we create a culture that supports children's curiosity, thinking and problem solving and ensure children are engaging with appropriate, cognitively-challenging activities.

Through participating in practical and experiential learning activities and experiences, children will; make use of their knowledge and understanding of mathematics to solve problems, communicate mathematical ideas to others orally, pictorially and in writing and develop mathematical reasoning.

Children are exposed to a range of concrete resources including; Dienes, Place Value Counters, Numicon, Cuisenaire, number lines etc. Concrete resources are practical items that pupils can hold and manipulate to help them explore abstract mathematical concepts and the relationships between them. These concrete resources help reinforce understanding and provides support when calculating mentally, mentally with jottings, using expanded methods and formal written methods. We follow the CPA (Concrete, Pictorial and Abstract) approach which supports children in building a deep contextual understanding of Mathematical concepts. Research shows that when children are introduced to a new concept, working with concrete physical resources and pictorial representations leads to a better understanding of abstract concepts.

Children should progress between the stages working towards formal written methods (where appropriate), once they have mastered each stage. Previous stages may need to be revisited to consolidate understanding when introducing a new strategy.

Children need to make considered decisions as to the most appropriate methods to make mathematics more functional. They need to choose the most appropriate, fluent, efficient and accurate method to do a particular calculation.

As new methods of calculations are introduced, children should have the opportunity to make connections between the methods and establish the similarities and differences between them.

This policy shows how the consistent use of the CPA (Concrete, Pictorial, Abstract) approach across White Rose Maths helps children develop mastery in both written and mental methods across all the operations in an efficient and reliable way. This policy includes sections on: Addition, Subtraction, Multiplication and Division, which build on a solid understanding of place value and builds connections between the four number operations. It outlines progression in teaching, from mental through to formal written methods.

The White Rose Maths positive approach focuses on reinforcing number competency, whilst providing opportunities to build reasoning and problem solving into each lesson and encourages each child to build confidence and resilience to achieve in Maths. It focuses on developing deep understanding rather than memorisation.

Please click on the link to access the White Rose Calculation Policy (Addition and Subtraction and Multiplication and Division). Each policy can be found on the school's web page – in the Maths section:

<https://stcatherines2.wpenginpowered.com/wp-content/uploads/2021/01/Maths-Workshop-Progression-of-Skills-Multiplication-and-Division.pdf>

<https://stcatherines2.wpenginpowered.com/wp-content/uploads/2020/12/Maths-Workshop-Progression-of-Skills-Addition-and-Subtraction.pdf>