



# Simonside Primary School

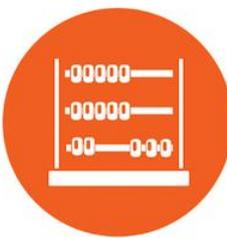
## Mathematics

At Simonside Primary School we believe that high achievement is possible, all children should aim to **maximise their potential** and that **any potential barriers to learning in Maths are overcome**.

We want to deliver a high-quality mathematics education founded upon the three aims of the 2014 National Curriculum. These are:



Understanding



Fluency



Problem-Solving



Reasoning

**Fluency** ~ to achieve fluency with regards to calculation

**Reasoning** ~ to be able to reason about the maths content children have learned

**Problem Solving** ~ to apply maths skills to solve increasingly more complicated problems.

Most important of all, we aim for children to leave Simonside Primary School **equipped with the Mathematical Skills required to successfully apply their understanding to future studies and eventually in the work place.**



## Aims

*The school aims to ensure that all pupils have:*

- An understanding of the important concepts and an ability to make connections within mathematics.
- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

**Our aims will be met by providing pupils with a wide range of rich learning opportunities which include incorporating concrete apparatus where appropriate. Lessons will be well structured and appropriately differentiated to meet the needs of all individual pupils.**

## How do we teach maths at Simonside?

At Simonside Primary School the National Curriculum should be fully implemented across school with each child receiving a **daily mathematics lesson**. Although the structure of the lessons may vary, they should be planned to **include opportunities for children to become fluent in the fundamentals of mathematics through varied and frequent practice, the reinforcement of key skills and times table recall**. Lessons should reflect the opportunity for each child to be **challenged**. Once a week Key Stage 1 and 2 children have a **Big Maths** session. This is where teachers and support staff take smaller groups of children to administer a maths skills test from the Assertive Mentoring Programme and then go through it in detail, focusing on the questions that children may have struggled with. As the questions only change slightly from one week to the next, it allows for children to consolidate learning, improve their score and ultimately move up to the next group.

At Simonside Primary School we develop children's mathematical knowledge, skills and understanding through **careful planning and preparation**, ensuring that throughout the school:

- Children are given opportunities for practical activities, role play and mathematical games.
- We develop children's mental and oral strategies with an emphasis on speed recall of number bonds and multiplication tables.
- We develop mathematical vocabulary.
- We encourage problem solving.
- We facilitate individual, group and whole class discussions and activities.
- We provide open and closed tasks, depending on where children are within a cognitive domain.
- We encourage a range of methods of calculating e.g. mental, pencil and paper and using a calculator.
- We understand mathematics through a process of enquiry and experiment.
- We regularly use ICT games to reinforce, develop and enthuse learning.

Staff refer to the school Calculation Policy in order to secure progression throughout school. They ensure that learning goes from a **concrete stage, to a pictorial stage and finally to the abstract stage**.

Staff implement the **cognitive science of learning to their teaching of maths**. They bear in mind concepts such as **desired difficulty, reducing cognitive load and making use of the episodic buffer** (see curriculum implementation policy for further in-depth detail).

## **Simonside Primary School's Approach to Maths**

- ***Foundation Stage***

At Simonside Primary School children follow the Early Years Foundation Stage Curriculum. We give all children the opportunity to talk and communicate in a widening range of situations and to practise and extend their range of vocabulary and numeracy skills. They have the opportunity to explore, enjoy, learn about, and use mathematics in a range of situations. Mathematics is planned on a half-termly basis and assessed using the criteria from the Early Learning Goals. Mathematics is taught both as a discrete subject and within the whole Early Years Curriculum to give children opportunities to use their numeracy skills in real life situations.

- ***Key Stage 1***

The following Breadth of Study for Key Stage 1 children covers the 2014 National Curriculum Programme of Study and is planned in blocks of learning as set out by the White Rose Hub:

- Count and calculate in a range of practical contexts.
- Use and apply mathematics in everyday activities and across the curriculum.

- Repeat key concepts in many different practical ways to secure retention.
- Explore numbers and place value up to at least 100.
- Add and subtract using mental and formal written methods in practical contexts.
- Multiply and divide using mental and formal written methods in practical contexts.
- Explore the properties of shapes.
- Use language to describe position, direction and movement.
- Use and apply in practical contexts a range of measures, including time.
- Handle data in practical contexts.

- **Key Stage 2**

The following Breadth of Study for Key Stage 2 children covers the 2014 National Curriculum Programme of Study and is planned in blocks of learning as set out by the White Rose Hub:

- Count and calculate in increasingly complex contexts, including those that cannot be experienced first hand.
- Rigorously apply mathematical knowledge across the curriculum, in particular in science, technology and computing.
- Deepen conceptual understanding of mathematics by frequent repetition and extension of key concepts in a range of engaging and purposeful contexts.
- Explore numbers and place value so as to read and understand the value of all numbers.
- Add and subtract using efficient mental and formal written methods.
- Multiply and divide using efficient mental and formal written methods.
- Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts.
- Describe position, direction and movement in increasingly precise ways.
- Use and apply measures to increasingly complex contexts.
- Gather, organise and interrogate data.
- Understand the practical value of using algebra.

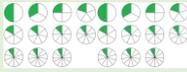
*Please see our parent guides on the website for how to support your child with maths in each phase of the school.*

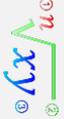
# Key Concepts taught across the school

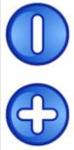
These key concepts are taught in KS1 and KS2 repeatedly.

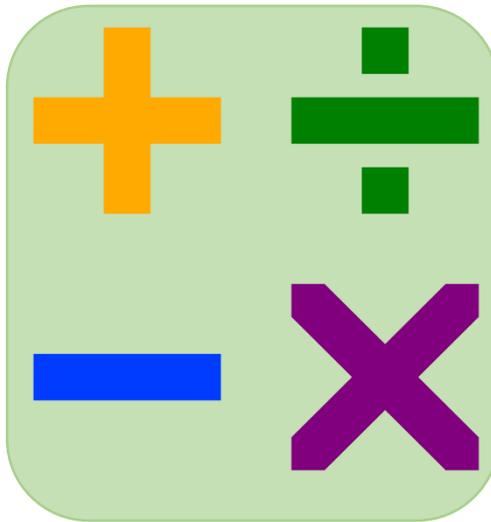
To use measures 

To use statistics 

Fractions (including decimals, percentages, ratio and proportion) 

To use algebra 

To add and subtract 



To know and use numbers

To multiply and divide 

To understand the properties of shapes 

To describe position, direction and movement 