Simonside Primary School

Maths Policy

Rationale

At Simonside Primary School we envisage a culture of high achievement in Maths. There needs to be a belief by all that high achievement is possible and 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 to achieve fluency with regards to calculation, to be able to reason about the maths content children have learned, and to apply these skills to solve increasingly more complicated problems. Most important of all, children leave Simonside Primary School equipped with the Mathematical Skills required to successfully apply these 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.

Implementation of the Policy

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 be rearranged, 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, in the Summer Term, 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.

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 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.

Assessment

At Simonside Primary School ongoing assessment is a crucial part of effective teaching. We are continually assessing our pupils and recording their progress. In most lessons an extension activity is planned followed by a challenge activity; these are also a means by which teachers can check knowledge and understanding. We strive to make assessment purposeful and robust allowing us to match the correct level of work to the needs of the children, thus benefiting the pupils and ensuring progress. Daily assessment takes place through marking. This involves using 'Think for Pink' (See Marking and Feedback Policy) and children responding to marking the following day in green pen. Comments or key questions should allow children to consolidate their understanding of a topic or, in cases where they are confident, provide further challenge.

For formative assessment, teachers assess children's work against the 'Basic, Advancing and Deep' statements for each Milestone. These statements reflect the Key Performance Indicators. The same grids are used to plan from (alongside the White Rose Hub) in order to make the teaching, planning and assessment cycle as tight as possible. The White Rose Hub end of half term tests are used by class teachers to inform teacher assessment, as well as weekly Big Maths scores in the Summer Term. Staff record assessments on the Depth of Learning Tracker which allows class teachers and SLT to assess whether children are on track to meet age related expectations. Children not making expected progress are identified and intervention strategies planned to support.

Spiritual, Moral, Social and Cultural Development (SMSC)

At Simonside Primary School Mathematics contributes to our SMSC development through helping children obtain an insight into the infinite, and through explaining the underlying mathematical principles behind natural forms and patterns. It also evident as we help children recognise how logical reasoning can be used to consider the consequences of particular decisions and choices and helping them learn the value of mathematical truth. Through our Maths curriculum children work together productively on complex mathematical tasks often recognizing that the result is often better than any of them could achieve separately. At Simonside Primary School children appreciate that mathematical thought contributes to the development of our culture and is becoming increasingly central to our highly technological future, and they learn that mathematicians from many cultures have contributed to the development of modern day mathematics.

Differentiation

At Simonside Primary School we aim to encourage all children to reach their full potential through the provision of varied opportunities. We recognise that our curriculum planning must allow children to gain a progressively deeper understanding and competency as they move through our school.

- More Able Learners

More able learners will be identified as part of our formative and summative assessment procedures. We will provide for their needs through a framework of high quality first teaching which focuses on ensuring the children are challenged appropriately. In addition, we will focus on developing their learning behaviours, including, greater reflection, problem solving and enquiry, making connections, higher order thinking skills and independent learning. The progress of more able learners will be rigorously tracked to ensure more able children reach their full potential. Teachers have supporting materials to help provide these children with activities that encourage a greater depth of understanding. These include the White Rose Math's Hub schemes along with the NCETM Mastery documentation and Mastery Maths resources (Chris Quigley).

- SEND/Inclusion

Children who are identified as being on the SEND register will be given support as identified on their My Support Plan. Children are supported in the first instance through quality first teaching. Lessons will be differentiated in line with the individual needs of the children. All provision for pupils with SEND is in line with the school's SEND policy.

Equal Opportunities

At Simonside Primary School the curriculum for Maths will develop enjoyment of and commitment to stimulating the best possible progress and the highest attainment for all our pupils irrespective of social background, culture, race, gender, differences in ability and disabilities. All of our pupils have a

secured entitlement to participate in the Maths Curriculum and our teaching approaches ensure the avoidance of stereotyping when planning work or organising groups. All the teaching staff agree that when using reference materials, they should reflect social and cultural diversity and provide positive images of race, gender and disability.

Homework

Children from Year 1 to Year 6 have weekly homework which is either based on what they have been learning in class or focused on practising mental recall. All tasks have a strong emphasis on the application of basic skills.

Children from Y2 to Y6 have a TT Rockstars login which they can use at home to practice tables. They also have a Mathletics login which focuses on application of basic skills.

In preparation for SATs the Year 6 teachers offer booster sessions before school to help the children consolidate skills learnt in the classroom and to provide a further opportunity to provide more challenging work for more able pupils.

Monitoring and Evaluation

At Simonside Primary School the Maths Coordinator monitors planning and assessments and checks that there is full coverage of the curriculum. The coordinator carries out lesson observations and work scrutinies and makes judgements about teaching and learning in maths based on the Leadership Lenses (See Curriculum Impact Statement).

To monitor and evaluate Maths the Maths subject co-ordinator does the following:

• Purchases and organises the appropriate resources.

• Supports colleagues in the teaching of Maths.

• Keeps up-to-date on the use of Maths in the curriculum and regularly attends training for subject leaders held by the local Maths Hub and feeds back new information and ideas to staff.

• Conducts Maths scrutinies to assess the standards of Teaching and Learning through the children's work.

• Regularly reviews and updates the Maths Policy and contribute to the school's self-evaluation programme.

• Analyses cross school summative assessment data.