

# St Silas Primary School



## Mathematics Policy

This Policy was reviewed in September 2019

Signed Chair of Governors Mr M Munro

Signed Head Teacher M Battersby

Next Review Date September 2020

## **Mathematics Policy**

### **Vision Statement.**

Loving God and one another, we work together to be the best that we can be.

### **Curriculum Policy**

This policy reflects the values and philosophy of St Silas' C. E. Primary Academy in relation to the teaching and learning of mathematics. It is in line with the school's policies on inclusion and equal opportunities, SEND, teaching and learning and assessment.

## Aims



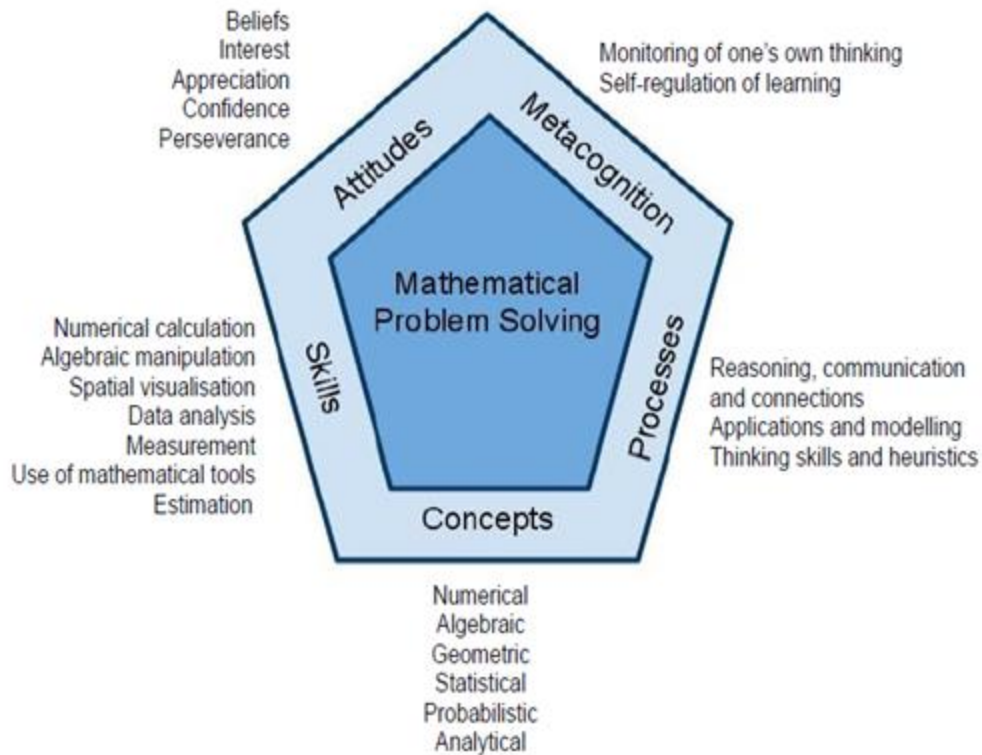
The St Silas curriculum for mathematics aims to ensure that all pupils:

1. Are proficient in their use of maths **vocabulary**
2. 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

3. **Reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
4. Can **solve problems** by applying their mathematics to a variety of routine and non-routine problems across the curriculum with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

In order to fulfil this aim, teaching is based on Mathematics objectives that match the National Curriculum 2014 Programmes of Study, and the Early Learning Goals taken from the EYFS.

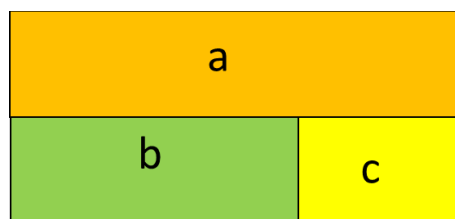
At St Silas we aim to ensure that conceptual understanding is integrated into lessons alongside procedural and factual fluency. We believe that maths does not rely on rote learning of facts and procedures without the underlying understanding required to use them effectively. There is a focus on number and calculation from the beginning. Every adult has high expectations of the children, and as such, should expect all children to attain high standards. Children are expected to develop a deep understanding of a concept through mathematical reasoning before progressing to the next level.



There is an emphasis in every year group on using concrete apparatus and pictorial images to support abstract mathematics (CPA). The children are supported in problem solving by using visual strategies; in particular the Bar Model is introduced in Key Stage 1 and continues into Key Stage 2.

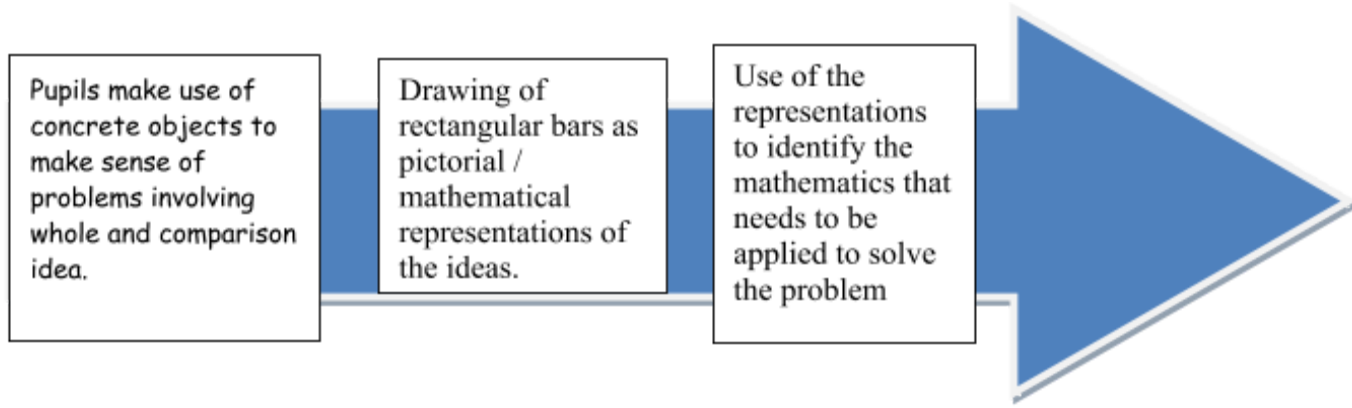
We aim to promote positive attitudes towards maths as we believe there is a link between success, confidence and enjoyment. We achieve this is by the use of maths in the STEM areas in the classrooms and by making maths fun.

**Problem Solving (The Bar Model)**



The bar model is used to support children in problem solving. It is not a method for solving problems, but a way of revealing the mathematical structure within a problem and gaining insight and clarity as to how to solve it. It supports the transformation of real life problems into a mathematical form and can bridge the gap between concrete mathematical experiences and abstract representations. **It should be preceded by and used in**

**conjunction with a variety of representations, both concrete and pictorial, all of which contribute to children's developing number sense.** It can be used to represent problems involving the four operations, ratio and proportion. It is also useful for representing unknowns in a problem and as such can be a pre-cursor to more symbolic algebra.



### **Scheme of Work**

We follow the Power Maths scheme of work.

This is a mastery approach to the teaching of Mathematics whereby topics are taught in depth over a longer period of time than a more traditional approach to curriculum organisation. Children keep practising new skills in our daily '4 a day' session, which is used as a time to embed new learning.

## **Planning**

Teachers in all year groups plan using the Power Maths scheme as the basis for most of their work. We aim, wherever possible, for children to access the work from their own year group. Occasionally, there may be a small number of children for whom this is not appropriate. They will look at earlier year groups if this is the case. Higher Ability children are extended using additional resources, maybe from NRich or NECTM etc.

## **Teaching**

- Lessons can be structured in a variety of ways to suit the topic and the class. However, most lessons will follow the Power Maths ‘I, We, You’ approach.
- Whole class teaching is used when appropriate.
- Kagan approaches are used when appropriate.
- The children also get the opportunity for collaborative work and independent work.
- There are five maths lessons a week. In Key Stage 1 teachers ensure that every child undertakes mathematical activities for at least 40 minutes per day. In Key Stage 2 daily mathematics lessons are usually taught in the first session of the day. They are at least an hour long.
- Key vocabulary for the lesson is taught and displayed.
- The use of worksheets is discouraged.
- The calculation policy is followed in every year group. The calculation policy is available in the Maths folder on staff shared.
- The following **core representations** are used across the school:

Place Value charts

Arrays

Numicon

Place Value Counters

Money

Base 10

Cuisenaire rods

- A Working Wall is used to support learning.
- Questions are planned to develop mathematical reasoning. Questions should be aimed at children explaining their reasoning. Other strategies are on the NCETM website and in the NCETM progression with reasoning maps.
- Key to the Mastery approach promoted by Power Maths is that children who have encountered problems have these addressed prior to the start of the next session. Staff may do this at any point prior to the session, but problems must be addressed in order to enable all children to move on together.

## **Assessment**

- Assessment grids on Target Tracker are updated on a regular basis using information based on the independent work that children complete in class.
- All children will be assessed in mathematics every 12 weeks, using White Rose Maths Hub assessments.



- NFER Maths assessment tests are used at the end of the year to form summative assessment data.
- Regular moderation staff meetings are planned throughout the year to ensure consistency in teacher assessments across the school.
- Gaps in learning will be identified on a regularly basis and children will be given targeted intervention time before the next lesson to enable them to move on with the rest of the class.

### **Use of Additional Adults**

Our tables are arranged in Kagan groups. This means that children of differing abilities are on each table, but they are seated in the same positions on each table.

This enables good discussion between children, but also enables Teaching Assistants to be directed to work with a particular group of children.

### **Computing**

Opportunities to use computing to support teaching and learning are planned for and used as appropriate.

### **Resources**

A range of resources are used to support teaching and learning. These are reviewed and updated regularly.

**Date: September 2019.**

**Next review September 2020**

This policy will be reviewed annually or in the light of new legislation. Staff and governors will be consulted and informed of any changes.