



# Maths Policy

## Vision statement

*At Christ the Sower Ecumenical Primary School we provide the 'good earth' for all our children to flourish; where every child can learn and explore who they are created to be, with the high expectation that we, individually and collectively, will enable every child to be and do the best they can.*

*A loving place where we all care, learn and grow together.*

## Members of staff responsible:

**Maths subject leader**  
**Deputy Head**  
**Teachers**

**Date of policy: September 2020**

## Policy Intent

At Christ the Sower, we intend for our pupils to leave as confident, lifelong mathematicians. Our mathematical teaching is based on the theory of mastery. We follow a curriculum based on the Power Maths scheme which ensures coverage and that skills progress logically and in small steps that our children can understand.

The curriculum in each year group starts with place value and number. This is because they are the basis of the rest of the learning for the year. The skills of place value and calculation are taught in their units; they are then applied continually throughout the rest of the year so children can use and apply them confidently in wider contexts.

Children at CTS work best when they are able to explore through trying and making mistakes, from which they then learn. For this reason we expect neat presentation in their maths books but we do expect to see a level of correcting happening this means that pupils take greater responsibility for their learning.

Monitoring suggests that our children find reasoning and problem solving challenging therefore, once children are fluent in a concept, they will be moved on to activities and learning that supports reasoning and problem solving. This is true for learners of all levels. It is important that all children experience reasoning and problem solving.

Christ the Sower Children are best supported through use of a concrete and pictorial stage before moving to the abstract. This provides them with models that the children can use to clearly understand the concept and images that will support their calculation strategies.

### **Policy Implementation**

The Mathematics Curriculum:

The programmes of study from the National Curriculum in England Framework sets out what pupils should be taught. By the end of Key Stage 2, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Mathematical content is divided into the following areas:

- Number
- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions (including decimals and percentages)
- Measurement
- Geometry
- properties of shape
- position and direction
- Statistics
- Ratio and proportion
- Algebra

The Power Maths scheme of work (a mastery programme designed to spark curiosity and excitement and nurture confidence in maths) is an enriched approach that cleverly combines interactive teaching tools, rich and quality textbooks and practice books. It models and embeds a growth mindset approach to maths and focuses on helping all children to build a deep understanding of maths concepts. Power Maths ensures that an appropriate amount of time is spent on each skill, with a clear progression in the acquisition of fundamental skills such as fluency, reasoning and problem solving.

### **Concrete, Pictorial, Abstract (CPA):**

Research shows CPA is a highly effective approach to teaching that develops a deep and sustainable understanding of maths in pupils. Children can find maths difficult because it is abstract so the CPA approach builds on children's existing knowledge by introducing abstract concepts in a concrete and tangible way. It involves moving from concrete materials, to pictorial representations to abstract symbols and problems. It is essential that any new concept be presented in a concrete way to all children regardless of previous attainment.

- concrete – children of all levels will use manipulatives to support the understanding of mathematical concepts. They are essential as they enable children to build mental pictures.
- pictorial – children then build on this concrete approach by using pictorial representations. These representations will support a growing understanding of mathematical concepts. They can then be used to represent and understand problems in order to reveal the maths hidden within. Bar modelling is a good example of this.

- abstract – with the foundations laid, children are able to move to an abstract approach using numbers and key concepts with confidence.

### **Bar Modelling:**

At Christ the Sower, we recognise that word problems and ‘real world’ maths problems are problematic for children. This is often because the calculation is ‘hidden’ in the words. It is important that children are given the skills and strategies to ‘reveal the maths.’ Staff at CtS model a range of pictorial representations to support this understanding. Bar modelling is a powerful example of this and it is used in all areas to represent all four operations.

### **Mathematical fluency**

Fluency is a key aspect of mathematical processing and underpinning that is a bank of facts that the children will need to have at their disposal. This includes times tables, number bonds, doubles and key factor pairs among other things. The knowledge and understanding, that these facts are based on, is taught in class. The facts themselves are then set as targets that the children will be tested on at least half termly and the progress of these targets will be tracked. To support this further, as part of our homelearning, we use TTRockstars, a carefully programmed timetables practise, to embed fluency.

### **Differentiation:**

The expectation is that the majority of pupils will move through the programme of study using the Power maths scheme at broadly the same pace. However, decisions about when to progress is always based on the security of pupils’ understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material are given further support to consolidate their understanding, including through additional practice, before moving on.

Differentiation can be through:

- use of support
- additional resources and extension activities based on problem solving
- targeted and open questioning
- puzzles and investigations

### **Special Educational Needs:**

- All pupils take part in mathematics lessons- the scheme allows Teachers to plan lessons so that all pupils can be included and can make progress in the lesson.
- In oral work, teachers plan a range of differentiated questions, with some targeted at specific pupils.
- Teachers also ask open questions that allow all children to take part.
- Teachers use a wide range of visual resources to illuminate meaning.
- During whole class teaching, discreet help is given to particular children by LSAs or 1:1 support staff where available.
- During activities, children may be supported by LSAs/ 1:1 support staff where available.

### **Intervention:**

It may be necessary for some children to take part in intervention sessions outside the normal mathematics lesson. These are operated in accordance with the class teacher, mathematics subject leader and Inclusion Manager. The impact of the intervention is measured by class teachers and monitored by SLT, including through pupil progress meetings.

### **Marking:**

Marking of children's work is essential to ensure they make further progress. Work is marked against success criteria, in line with the school marking policy, and includes next steps. Children are encouraged to self-assess their work and given time to read teachers' comments and make corrections or improvements. Responses to marking are made as close to the work as possible, ideally at the start of the next lesson. Some pieces of work in mathematics can be marked by children themselves, exercises involving routine practice with support and guidance from the teacher – particularly in years 5 & 6.

### **Environment:**

Every classroom has a set of basic, everyday maths resources that are available to all pupils. A number line, place value chart and key vocabulary is displayed in every classroom. The school provides a mathematically stimulating environment:

- through displays that promote mathematical thinking and discussion
- by providing a good range of resources for teacher and pupil use.
- by promoting high quality mathematical talk
- working walls which are in place and regularly updated. They are used as a learning tool and as such can reflect the learning.

Additional mathematical equipment and resources are stored centrally in the resources room.

### **Assessing Impact:**

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through;

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments.

### **Monitoring and Evaluation:**

Monitoring and evaluation will be carried out by:

- The Head teacher
- The mathematics subject leaders
- Members of the Senior Leadership Team
- IAC and the ODBST representatives

Monitoring exercises include:

- classroom observation, learning walks and drop ins with feedback
- reviewing children's work, book scrutiny and work sampling
- pupil interview
- analysis of test data and papers
- monitoring of assessment
- work moderation
- the mathematics subject leader will make an annual report to the governors
- INSET, staff training and CPD
- monitoring of the impact of interventions

**Reporting Procedures:**

- annual reports to parents should include comments on:
- pupil progress
- pupil effort and attitude
- areas of strengths and future development
- targets and next steps

**Role of the Maths Subject Leader:**

- to lead in the development of maths throughout the school.
- to monitor the planning, teaching and learning of mathematics throughout the school.
- to help raise standards in maths.
- to provide teachers with support in the teaching of mathematics.
- to provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan.
- to monitor and maintain high quality resources.
- to keep up to date with new developments in the area of mathematics

**Freddie Stott/Saeeda Wilson-Andoh – Maths Subject Leaders**