



Christ the King Mathematics Policy



Date	Review Date	Responsible Person
September 2021	September 2022	Mr Colley

Intent

At Christ the King Catholic Primary School we believe that mathematics equips pupils with a uniquely powerful set of tools, through developing an ability to calculate, reason and solve problems. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, they also learn to appreciate the contribution made by many people to the development and application of mathematics.

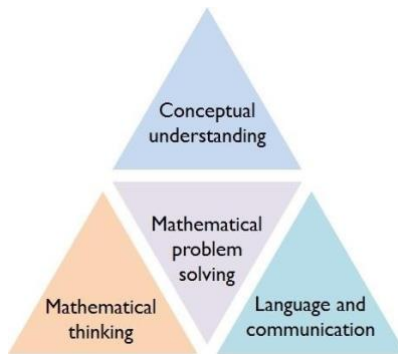
It is our aim to develop:

- A growth mindset about ability to learn mathematics
- A positive attitude towards mathematics and an awareness of how fascinating elements of mathematics can be
- Competence and confidence with numbers and the number system and other mathematical knowledge, concepts and skills
- Problem solvers, who can reason, think logically, work systematically and apply their knowledge of mathematics
- An ability to communicate using mathematical language
- An ability to work both independently and with others

Implementation

At Christ the King Primary School, our aim this year will be to further embed the Mastery Approach to teaching Mathematics.

We aim to deliver high quality maths lessons using the following key principles:



This approach has mathematical problem solving at its heart and has three key principles, we teach children to:

- 1. Use spoken and written language with confidence and clarity to explain and justify mathematical reasoning.**

Every lesson involves children explaining mathematics.

- 2. Have a deep conceptual understanding of mathematical concepts.**

This is achieved through covering fewer topics in greater depth. Pupils master concepts rather than learning procedures by rote. They do this using concrete objects and pictures before moving to abstract symbols (numbers and signs).

- 3. Develop mathematical thinking, including generalising, classifying and comparing, and modifying.**

Teaching and Learning

We use the Power Maths and White Rose schemes of work, which ensures continuity and progression in the teaching of mathematics.

Within a unit of work, the time spent on teaching a specific learning objective or set of learning objectives depends on the needs of the children.

Lessons will follow a six-part structure to allow for continuous Assessment for Learning:

- 1) Starting Point (A short task or question on the board for the children to be thinking about)
- 2) Sharing of the learning objective and modelling of the new learning
- 3) Paired Talk Task
- 4) Develop Learning
- 5) Independent Work
- 6) Plenary

Planning

All teachers plan daily mathematics lessons following this structure.

Where possible teachers pre-empt 'big' misconceptions that many children will have – eg a rectangle/oblong has four lines of symmetry (diagonals). Teachers also plan which vocabulary they will use and which models, images and **concrete resources** they will use to aid learning. Effective plenaries are only part-planned as misconceptions only arise during the teaching of the lesson.

We ensure that across each term children are given a range of experiences in mathematics lessons e.g., practical activities and mathematical games, group problem solving activities, individual, group and whole class discussion activities, open and closed tasks. We ensure that children can use a range of methods to calculate and have the ability to check whether their chosen methods are appropriate, reliable and efficient.

A separate 'Calculation Policy' has been adopted in school to ensure complete continuity and gradual development of number skills.

Differentiation

Our staff have high expectations of all children, irrespective of ability, and encourage them to be successful and achieve their full potential. Our aim is to ensure challenge for all. Children are encouraged to have a growth mindset about their ability to do mathematics. Encouraging children to 'have a go' is seen as paramount.

We believe: **'It's okay to make mistakes! – that's when we learn best'**

In some lessons children 'self-differentiate' and choose the level of challenge right for them. In other lessons, teachers direct children to the correct level of challenge based on their assessment in the initial phases of the lesson.

Differentiation of tasks is done in various ways:

- Open ended questioning and activities which allow more able children to offer more sophisticated mathematical responses
- Stepped Activities which can be accessed at different steps, supporting and challenge all
- Recording e.g. allowing some children to give verbal responses and photographing their learning
- Resourcing eg. Use of cubes, 100 squares, number lines, mirrors to support.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme. Part of independent work often involves some focused, targeted group work from the teacher. However, groupings are 'fluid and flexible' based on the needs of individual pupils.

Assessment

We recognise that AFL lies at the heart of promoting learning and in raising standards of attainment. We further recognise that effective AFL depends crucially on actually using the information gained.

The assessment procedures within our school encompass:

- Making ongoing assessments and responding appropriately to pupils during 'day-to-day' teaching.
- Using knowledge of pupils drawn from key objectives records to guide our planning and teaching;
- Adjusting planning and teaching within units in response to pupils' performance.

Homework

- This will be set weekly in accordance with the Homework Policy and marked and returned for the child to review his/her success and needs.
- Homework will be relevant to that week's learning.
- The homework will meet the specific learning needs of each individual pupil.

Special Educational Needs

Children with SEN are normally taught within the daily mathematics lesson. When additional staff are available to support groups or individual children they may withdraw small groups to use intervention materials. Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult, but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Equal opportunities

All children should have equal access to the curriculum, irrespective of particular circumstances such as race, background, gender and capability. In the daily mathematics lesson, we ensure this by supporting children in a variety of ways: E.g. repeating instructions, emphasising key words, using picture cues.

Vocabulary and precision of language

Developing children's language and vocabulary is absolutely essential.

- In all lessons attention is given to whether key vocabulary has been learnt.
- Key vocabulary is visible on the Maths Working Wall during lessons and instantly added to as new words arise.
- Paired talk activities are used to encourage children to talk about their mathematics.
- Teachers insist that children mirror the language they hear the adults using.
- Where appropriate, children are encouraged to answer using STEM sentences. eg. I have ? groups of ? and ? remaining.

Adults mirror back alternative words for the same meaning to enrich children's range of vocabulary. E.g. Child says '3 times 5 is 15', teacher says, 'yes, the product of 3 and 5 is 15' or '3 multiplied by 5 equals 15'.

- Children are required to provide justification and reasoning for their answers. For example, 'I know the shape is a square because....'
- Teachers are required to have sound subject knowledge and understanding of the correct terminology and vocabulary and they refer to the school's glossary of maths terms if unsure. E.g. There is no such thing as a 'take away' sum (because 'sum' means 'add'). We use the terms 'calculation' or 'equation'.

Working walls will contain:

- Key vocabulary for topic
- Fluency examples specific to Year group (Number bonds/table facts)
- Examples of small steps being taught that week
- Calculations to see methods in different context
- Opportunities to apply new learning.

Monitoring, Support and Evaluation

The mathematics subject leader will be working alongside all teachers to ensure the smooth transition towards the delivery of Mastery Maths. The aim is for the coordinator to spend at least 1 hour a week dedicated to overseeing the embedding of this approach and supporting staff members. This will take the form of curriculum planning sessions, mastery lesson example lessons and teacher observations. The mathematics subject leader will also work with the NCETM to develop mastery and deliver CPD.

Role of the Subject Leader

- To take the lead in policy development
- To support colleagues e.g., leading staff CPD, planning support, team teaching
- To monitor and be accountable for progress in Mathematics – this may be done through scrutiny of work, observations and analysis of formal assessment data
- To take responsibility for the choice, purchase and organisation of central resources for Mathematics, in consultation with colleagues
- To be familiar with current thinking concerning the teaching of Mathematics, and to disseminate information to colleagues The subject leader will report on mathematics to the Headteacher and will liaise with the named link governors.