

# MATHEMATICS POLICY



REVIEW DATE: JANUARY 2018

## **Introduction**

This policy outlines the aims, organisation and management for the teaching and learning of Mathematics at Castle Primary School. Effective Teaching of Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world and is important in everyday life.

Castle Primary School strives to deliver a stimulating and enjoyable Maths curriculum whilst ensuring that through appropriate support and challenge, learning is tailored to each and every child. This approach reflects the aims of the National Curriculum (2014).

## **Rationale**

Maths in Key Stages 1 and 2 is a subject which involves confidence and competence in the areas of number, measurement, geometry and statistics. This Mathematics Policy values underpinning mathematical learning by providing a balance between conceptual understanding and procedural fluency in order to develop the children's arithmetic proficiency. It also promotes the ability to solve problems in a variety of mathematical contexts. To be secure in curriculum expectations, the children should demonstrate their understanding using a variety of manipulatives and models and be able to articulately explain their thinking whilst engaging in dialogic discussion.

We, as a school, recognise that these are fundamental necessities for children to be able to fulfil their potential in their academic lives and in society as a whole, allowing them to meet challenges equipped as numerate individuals. In primary education, we supply the foundations for everything that will follow.

The school's policy for maths is built around the 2014 National Curriculum.

## **Aims**

As a school, we place great emphasis on the children learning as much as possible through their own first-hand experience, in order to properly understand and acquire their knowledge and skills. We strongly value offering the children opportunities to use models and images to support their thinking. This philosophy permeates everything about our teaching and how the children encounter mathematics in school.

Each child should be able to think and solve problems mathematically by using appropriate skills, manipulatives, concepts and knowledge. Children should be provided with rich and enjoyable experiences related to both individual needs and the wider requirements of society.

## **We aim for the children to:**

- Have a positive attitude to Mathematics, with learners taking an interest and pleasure in their work, developing confidence and independence.
- Be able to work systematically, cooperatively and with perseverance.
- Acquire mathematical skills, knowledge and concepts at an appropriate time for each individual child.
- Be able to think logically.
- Experience a sense of achievement regardless of age or ability.
- Understand the appropriate underlying skills, concepts and knowledge of number, measurement, geometry and statistics.
- Effectively use manipulatives to support thinking, learning and understanding.
- Be able to apply previously acquired concepts, skills and knowledge and understanding to new situations both in and out of school.
- Understand and appreciate pattern and relationship in Mathematics.
- Be able to communicate with peers and adults, ideas, experiences, questions, clearly and fluently, using the appropriate mathematical vocabulary.
- Be able to explore problems using the appropriate strategies, predictions and deductions.
- Be aware of the use of mathematics beyond the classroom.
- Encourage the use of mental calculations and efficient strategies to work out solutions to enable them to develop procedural fluency alongside their conceptual understanding.

## **For Parents to:**

- Be actively involved in their children's mathematical learning both in school and at home.

## **Approaches to Teaching**

### Teaching Time

To provide adequate time for the development of mathematical skills each teacher will usually provide a daily maths lesson. This may vary in length but will usually last for an hour. Links will also be made to mathematics within other subjects so pupils can develop and apply their mathematical skills (e.g. through topic work). As part of their broader experience, children will be involved in class-based 'Maths Mastery Sessions' and problem reasoning activities utilising a range of Maths skills in a practical context.

## **Class Organisation**

From Year Two pupils are grouped for Mathematics dependent on their ability. Within these lessons there will be a balance between whole-class learning, group teaching and individual practice to provide further differentiation within a set. These groupings are flexible dependent on the topic being taught and on children's different learning needs throughout the year.

Nursery and Reception pupils experience Mathematics on a daily basis. This early introduction to Mathematics will generally be undertaken orally and often in the context of a class theme, e.g. a story. Opportunities for Mathematics are developed through daily routines and all areas of learning.

Year One are taught Mathematics in practical sessions, whenever possible. They use a variety of equipment to support their learning and progress.

## **A Typical Lesson**

A typical lesson will usually be structured as follows:

- *Mental Oral Warm Up*

This will involve whole-class work to rehearse, sharpen and develop mental and oral skills, often involving a counting activity.

- *The main teaching activity*

This will provide both teaching input and pupil activities and a balance between whole class, grouped, paired and individual work based on ability.

- *Mini Plenaries throughout the lesson*

This could be with the whole class or a specific group, and can be used to identify misconceptions, ensure progress, summarise key facts, assess against the success criteria for the lesson, to make links to other work and discuss the next steps in learning.

- *Plenary*

An opportunity to make links between sequences of sessions, reflect on learning against the success criteria and practise taught skills.

Sometimes the session will begin with the introduction of a *problem* for the children to solve by the end of the session. Skills used within the session will then lead to the outcome.

## **Homework**

Homework is used to provide opportunities for the children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies and to prepare for future learning. Homework is set at the discretion of the Class Teacher up to Year One. Regular homework is set for children from Year Two who are also encouraged to engage in Mathematics on Education City (a mathematical internet based learning programme) at home. Home learning may take the form of a game or investigation.

## Resources

Tables within each classroom have appropriate resources available for the children to independently use. Each class is resourced with appropriate equipment, with many resources kept centrally for all to use regularly. Many different types of physical apparatus are used including Base 10 apparatus, number rods (Cuisenaire), bead strings, Dienes, counting sticks and number lines to aid pupil's learning by the use of models and images. Laminated prompt sheets are available for use by children to support their learning.

## Planning

Long term and medium term planning is structured consistently as a school, using the appropriate year group objectives. Guidance is also available from the document 'Planning Support for the Mathematics National Curriculum'.

Within planning, teachers include Key Objectives, Success Outcomes, key activities and ability groupings to provide differentiation, resources, vocabulary, assessment questions and use of support when planning. Teachers are also encouraged to reflect on the lessons taught and the learning that has taken place to inform further sessions.

A Calculation Progression for numerical written methods is used throughout the school to ensure that number operations are taught in an agreed format, consequently ensuring progression and continuity across the school. This is made available to parents on the website or in paper format if requested.

## Assessment

The school's assessment policy gives a detailed account of how assessment is carried out in the school.

Assessment will take place at three connected levels: short term, medium term and long term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

*Short-term assessments* will be an informal part of each lesson to check understanding and give the teacher information, which will help to adjust day to day lesson plans. It enables teachers to evaluate the stage of a particular child's learning and what steps will be required next in order for the child to make further progress.

*Medium-term assessments* will take place each half term. Each term, formative and summative teacher assessments are used to inform this. Expectations for attainment are discussed at pupil progress meetings with the SLT to assess individual and cohort progress and set targets for future improvement. Mathematics Assessment Grids based on the National Curriculum 2014 are used to support judgements and are highlighted and dated for each individual child.

*Long Term assessments* will take place towards the end of the school year to assess and review pupil's progress and attainment. These are currently made through compulsory National Curriculum tests for pupils in Year 2 and 6. Teachers will also draw upon their pupil assessment grids against key objectives and supplementary notes and knowledge about their class to produce a summative record. Timely and informative reporting to parents occurs each academic year in July before this information is thoroughly handed over to the child's next class teacher, or when appropriate, next school.

## Self Assessment – possible strategies

- Wherever possible children will be involved in assessing their own work through effective questioning and dialogic talk with their peers.
- Notes, comments or questions are written in green pen to be responded to by pupils
- Thumbs up or down
- How (Success criteria) - linked to the objectives/ success criteria
- Peer Assessment

## **Curriculum links**

This policy is supported by a range of whole school policies on, for example, learning, assessment, marking and special needs that will guide and support the work described in this policy.

## **Equal opportunities**

All children will have an equal opportunity to work within this policy area. Account will be taken of their needs and where appropriate support for them will be accessed through the special needs policy.

## **Roles and responsibilities**

This policy has been developed through consultation between staff and between the subject leaders, Head Teacher and Governing Body. The SLT and subject leaders monitor and evaluate the work achieved by the children in this area. The subject leaders identify areas for development, resource needs and help in the moderation of standards across the school. The leaders also work with the linked subject Governor for each year group so that they are aware of such issues. The leaders liaise with the link Governor about their visits to school. The linked Governor will also keep the Governing Body informed about developments in this area.

## **Monitoring and evaluation**

The monitoring and evaluation of the achievements made in this area of the curriculum is carried out through the guidelines on monitoring and evaluation. These set out how the SLT and Governing Body who use a range of strategies to assess the quality of achievements. The class teachers however, have a key role in monitoring and evaluation of their work and that of the children in their class. The Headteacher works with the governing body to inform them about the work carried out within the school. An annual external review is held by Congleton Multi Academy Trust to inform the Board of Directors of the progress and attainment at Castle Primary.