

**Sleaford Church Lane Primary School and Nursery**

**Teaching for Mastery Maths Policy**

**Introduction**

A high-quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (National Curriculum 2014)

At Church Lane Primary School, all of our children are given the opportunity to develop their mathematical potential through a rich, engaging curriculum. We want our children to feel confident in using and applying mathematics in a wide range of situations.

We believe that mathematics is uniquely powerful in helping us to make sense of, and describe, our world and in enabling us to solve problems.

**Aims**

The purpose of our mathematics education is to offer pupils intellectual excitement and challenge; to provide them with a sense of delight and wonder; to equip them with knowledge and skills and the ability and confidence to use and apply these to meet the needs of present and future society.

Church Lane Primary School aims to ensure that all pupils have access to a wide range of stimulating problems and activities, which will include the appropriate Programmes of Study of the National Curriculum 2014 and the EYFS curriculum. As they move from home into school and from primary into secondary education their mathematical experience should be continuous and progressive producing competent and confident young mathematicians.

We ensure that the statutory requirements of the National Curriculum 2014 are met and so too are their aims:

* To become fluent in the fundamentals of mathematics
* Reason mathematically
* Solve problems

**Teaching for Mastery Principles**

We work with the NCTEM Maths Hub and use the White Rose Materials in order to deliver a Mastery approach to Maths lessons. The principles of Mastery teaching are set out below:

* Teaching is underpinned by a belief in the importance of Mathematics and that the vast majority of children can succeed in learning Mathematics in line with national expectations for the end of each key stage
* The whole class is taught Mathematics together, with NO differentiation by acceleration to new content. The learning needs of individual pupils are addressed through careful scaffolding, skilful questioning and appropriate rapid intervention, in order to provide the necessary support and challenge
* Factual knowledge (number bonds and times tables), procedural knowledge (formal written methods) and conceptual knowledge (place value) are taught in a fully integrated way and are all seen as important elements in the learning of Mathematics.
* The reasoning behind Mathematical processes is emphasised. Teacher/pupil interaction explores in detail HOW answers were obtained, WHY the method/strategy worked and WHAT might be the most efficient method/strategy.
* Interim methods (expanded methods for addition and multiplication) to support the development of formal written algorithms are used for a short period only, as stepping-stones into efficient, compact methods.
* Precise Mathematical language, coached in full sentences, is always used by teachers, so that Mathematical ideas are conveyed with clarity and precision. Pupils are required to do the same (when talking about fractions, both the part and its relationship to the whole are incorporated into responses: *‘The shaded part of the circle is one quarter of the whole circle”).*
* Conceptual variation and procedural variation are used throughout teaching, to present the Mathematics in ways that promote deep, sustainable learning.
* Carefully devised exercises employing variation are used. These provide intelligent practise that develops and embeds fluency and conceptual knowledge.
* Sufficient time is spent on key concepts (e.g. multiplication and division) to ensure learning is well developed and deeply embedded before moving on.

**Curriculum design**

* Programmes of study and lesson content are carefully sequenced (using the White Rose Small Steps documents), in order to develop a coherent and comprehensive conceptual pathway through the Mathematics.
* Learning is broken down into small, connected steps; building on from what the pupils already know.
* Children are allowed time to reflect on new concepts through their Maths books
* Difficult points and potential misconceptions are identified in advance and strategies to address them planned.
* Key questions are planned, to challenge thinking and develop learning for all pupils.
* Contexts and representations are carefully chosen to develop reasoning skills and to help pupil’s link concrete ideas to abstract Mathematical concepts.
* The use of high quality materials and tasks to support learning and provide access to the Mathematics is integrated into lessons. These may include colour co-ordinated labelled questions, visual images and concrete objects.

**Features of teaching**

* Lessons are sharply focused; digression is generally avoided.
* Key new learning points are identified explicitly.
* There is regular interchange between concrete/contextual ideas, pictorial representations and their abstract/symbolic representations.
* Mathematical generalisations are emphasised as they emerge from underlying Mathematics, which is thoroughly explored within contexts that make sense to pupils.
* Making comparisons is an important feature of developing deep knowledge. The questions “What’s the same, what’s different?” are often used to draw attention to essential features of concepts.
* Repetition of key ideas (for example, in the form of whole class recitation, repeating to talk partners etc) is used frequently. This helps to verbalise and embed Mathematical ideas and provides pupils with a shared language to think about and communicate Mathematics.
* Teacher-led discussion is interspersed with short tasks involving pupil-to-pupil discussion and completion of short activities (usually on whiteboards).
* Formative assessment is carried out throughout the lesson; the teacher regularly checks pupils’ knowledge and understanding and adjusts the lesson accordingly.
* Gaps in pupils’ knowledge and understanding are identified early by in-class questioning. They are addressed rapidly through individual or small group intervention, during assembly time, guided reading time or afternoon sessions. It is essential the intervention takes place on the same day to ensure ALL pupils are ready for the next lesson.
* Teachers discuss their Mathematics teaching regularly with colleagues; sharing teaching ideas and classroom experiences in detail – working together to improve practice.

**Lesson structure**

* In lessons, there are opportunities for exploration, structuring, documenting, practice and reflection.
* An anchor task is used to engage the children in their learning (usually a discussion question) and children are given time to explore this with their peers.
* The children are then allowed time to discuss in a whole-class situation to gauge ideas and theories from all pupils.
* Enrichment is used over acceleration. Higher attaining pupils should be able to solve problem solving questions (green) during a lesson, compared to other pupils who may only achieve Fluency (orange) and/or Reasoning/Explanation (blue).
* Guided practice allows children to practise and apply their new knowledge (and methods) to different problems, with support as needed from a peer or adult.
* Children should then be able to apply their understanding to independent tasks, which will need them to use what they have learnt to answer different questions.

**Marking**

Marking should be completed in line with Sleaford Church Lane Primary School marking policy. Next steps may not always be necessary as the next lesson is normally the next step in learning. However, it is essential that all marking picks up and addresses any misconceptions/mistakes and thorough questioning ensures children have clarified their thinking clearly in their books before the next lesson.

**Assessment, Recording and Reporting**

To develop learning, pupils will be continuously assessed using a variety of strategies - observation, questioning, marking in accordance with our school marking policy..

In KS1 and KS2 children are tested using a range of set tasks designated as appropriate to test individual pupils, groups or a whole class on an individual or range of attainments.

Information will be recorded onto the schools tracking system and then used to inform future planning, and to identify children for intervention and support.

The Class Teacher, Mathematics Co-ordinator, SENDCo and Head Teacher keep records of assessments.

Statutory Assessment Tasks (SATs) will be administered in accordance with the law at the end of KS1 and KS2.

Parent’s consultations are held each full term (except the summer term where reports are sent out) where the teacher discusses children’s targets and progress in Mathematics.

**Management**

The role of the Maths Co-ordinator is to:

* Ensure a core of material is available
* Review and monitor planning
* Monitor Maths teaching and evaluate pupils work
* Arrange liaison with outside consultants
* Work alongside staff to support if required
* Attend relevant courses to be aware of new ideas and disseminate these to all staff and to arrange appropriate inset for colleagues
* Be responsible for ordering all math’s resources
* Carry out a curriculum review and relay findings to the Governors and staff
* Update the policy document and schemes of work as necessary

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