Stanford in the Vale Primary School

Mathematics Policy

This policy reflects the school's aims and objectives in relation to the teaching and learning of Maths. It sets out a framework within which teaching and non-teaching staff can operate. It gives guidance on planning, teaching and assessment. The policy should be read in conjunction with the Early Years Foundation Stage framework and the National Curriculum 2014. These set out the rationale for teaching each area of the Maths Curriculum and specify the skills and knowledge that will be developed for the majority of pupils in each year group. This document is the outcome of consultation and review undertaken by the Maths Co-ordinator with the staff.

The policy is intrinsically linked with and is informed by other school policies, including:

- Maths Calculation policy
- Teaching and Learning policy
- Marking policy
- Foundation Stage policy
- Inclusion policy

Intent:

At Stanford in the Vale CE Primary School we have adopted a mastery approach in the learning and teaching of mathematics. As things stand, this is being embedded across the school. The main aim of such an approach and development of a curriculum model that values 'going deeper' is to ensure that our children develop a secure knowledge of mathematical concepts, so that those pupils beginning their education at school are able to access age-appropriate ideas and do not see gaps open in their learning over time. Integral to this is the school's vision for mathematics which, '…rejects the idea that a large proportion of people 'just can't do maths," [and aligns with the] 'belief that by working hard at maths they can succeed.' *NCETM* – *'The Essence of Maths Teaching for Mastery'* (2016)

Despite starting to develop a mastery approach in the learning and teaching of mathematics, we are aware that some children will have gaps in their pre-requisite knowledge. Consequently, our medium-term planning has been designed to take into account cases where 'catch-up' is still required. Medium term planning also shows longer being spent on each topic as mastery is an integral part of the system, so that a broadening of knowledge and skills can take place as part of pupils' learning experiences.

As a result of this approach being taken, it is likely that those undertaking learning walks and/or monitoring lessons will see more whole-class teaching than may have been

evident before the implementation of the 2014 National Curriculum. Pupils progress through curriculum content at broadly the same rate, although support/intervention and broader opportunities are provided to move groups of children on so that they are able to:

- Scaffold - Grasp concepts and methods, e.g. through more varied use of practical equipment – in the case of lower attainers
- Challenge - Be challenged through exposure to greater depth in their learning, e.g. through tackling more complex problems in different contexts - in the case of higher attainers/rapid graspers

As a result, differentiation is sometimes likely to appear to be more subtle than before. Practise and consolidation play a central role in pupils' learning experiences. Although the 'pace' in lessons may appear to be slow, this could mask development of deep understanding of mathematical concepts through use of small-steps. Further challenge is provided to all children through use of problem solving, which may or may not be linked with a real-life context.

Implementation:

All of the above decisions taken in terms of curriculum design and learning/teaching are inextricably linked to necessary Continuing Professional Development (CPD) for teaching staff. School leaders ensure a range of CPD is made available for staff, which means that increasing consistency is gained across Early Years as well as Years 1-6.

To support the teaching of maths mastery across the school, we use the scheme of learning provided by White Rose. A yearly overview for each year group suggests the teaching time needed for every block of learning. The termly overviews show the objectives for each block. These objectives derive directly from the National Curriculum (2014). The objectives in each block are broken down into a series of carefully planned small steps. Teachers plan their units using these small steps. Teachers also access other mastery resources to support which include Classroom Secrets, Master the Curriculum, NCETM, Maths Shed, I See Reasoning and White Rose premium resources.

In cases where children's learning is most effectively being deepened, the following descriptors can be seen in their learning:

Depth:

- describe it in his or her own words;
- represent it in a variety of ways (e.g. using concrete materials, pictures and symbols – the CPA approach)[8]
- explain it to someone else;
- make up his or her own examples (and non-examples) of it;
- see connections between it and other facts or ideas;
- recognise it in new situations and contexts;
- make use of it in various ways, including in new situations.[9]

Greater depth:

- solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination;
- independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics.

NCETM – 'Teaching for Mastery: Questions, tasks and activities to support assessment' (2015)

In terms of assessment, and in order for the mastery approach to work, we understand the particular need for children to achieve key objectives for their current stage of learning. Such assessment links with day-to-day Assessment for Learning, which informs teachers about the elements of learning pupils need to develop further. In lessons, teachers use precise questioning to check conceptual and procedural knowledge. They formatively assess how misconceptions can be used as growth points in learning, whilst also diagnosing who requires intervention, meaning that all children are expected to 'keep up' rather than 'catch-up.' Assessment gathering is kept meaningful and is viewed as a diagnostic tool whereby collated information is used purposefully when planning pupils' next-steps.

Through their lessons, teachers aim to promote connections within and across National Curriculum domains, so that children are taken deeper with their learning over time and recognise the interconnectedness of concepts. It is also intended that pupils revisit concepts, for example, multiplication within area when presented as an array model, which means that pupils absorb learning within their long-term memory.

It should be noted that varied use of practical resources, structures and representations, plus questioning that requires deeper reasoning is used to ensure all children are scaffolded and challenged appropriately. A progression in key representations and structures, leading to understanding of sometimes complex and abstract concepts, has been defined and is exemplified in the school's calculation policy. This in turn supports the delivery of consistent approaches and equity of access for learners.

Impact:

The attainment and progress of pupils' learning is tracked by class teachers and senior leaders, so that swift interventions can be put into place, including for children who have not always experienced a mastery approach in mathematics over time, and may include the use of pre-teaching. Alongside more informal assessments within lessons and retrieval practise, children undertake end of unit assessments which are written by White Rose and mirror the teaching in our programme of study.

The school's marking policy allows children's levels of independence to be evident, as instances where pupils have the most secure knowledge and skills can most easily be recognised when they've applied learning independently and in a range of ways, including across different areas of the curriculum. On occasions when such extended depth has yet to be developed, an expected core impact of our curriculum is that pupils are at least ready to move on to the next key stage of learning.

The maths co-ordinator keeps samples of children's work in a portfolio, which are used to demonstrate the expected level of achievement in maths throughout the school.

The maths co-ordinator meets with the curriculum coordinator to discuss pupil voice, books scrutiny, planning and displays.

A report on the areas covered and pupils progress against national expectations is sent to parents/carers at the end of the academic year.

Homework:

Each child from Years 2-6 are registered with Times Table Rockstars. Each child from Foundation Stage and Year 1 are registered with Numbots. Each week the children are expected to complete a minimum of 3 minutes daily as homework, promoting a little and often approach to learning/retrieval practise. Teachers are able to monitor the children's usage each week. Children are praised for the achievements in a weekly Collective Worship. In addition to this, staff will provide pupils with opportunities to develop their fluency in other areas of mathematics as well as reflect of their learning throughout the year so far with retrieval practise. Year 6 adapt their homework according to the needs of the class.

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