



Moor End Primary School

Reasoning Policy

Updated September 2021

Coordinator – Mr P Sumner



POLICY DOCUMENT FOR REASONING

OVERVIEW

In this school, we value every pupil and the contribution they have to make. As a result we aim to ensure that every child achieves success and that all are enabled to develop their skills in accordance with their level of ability. Reasoning skills are viewed by many in the educational field as a meaningful indicator of mathematical competence. Being exposed to a wide range of non-verbal and verbal reasoning materials from an early age must certainly impact of mathematical ability. Therefore here at Moor End, we aim to teach strategies to tackle tasks and develop children's capacity to think logically.

OBJECTIVES

1. To reason mathematically by following a line of enquiry.
2. To recognise relationships and generalisations.
3. To develop an argument, justification or proof to a problem.
4. To use mathematical language.

REASONING STRATEGIES

All staff are expected to include, where possible, reasoning questions throughout a unit of work and at least one lesson a week with a focus on mathematical reasoning. When planning, teachers are to refer to the both White Rose/Mastery and Lancashire Scheme of Work provided to ensure that the reasoning questions/strategies are suitably demanding. These can be easily adapted into a range of contexts and can be integrated into classroom routines. These have been developed from, training courses, online resources and published materials.

The five core strands to reasoning used within our school are as follows –

Describe • Say what you see, hear or do
Explain • Offer some reasons for your opinion
Convince • Yourself or a friend that you have a solution or case
Justify • Say why you are convinced
Prove • To others with an argument including reasons when challenged

These strategies are a very powerful way of developing pupils' reasoning skills and can be used flexibly. Many are transferable to different areas of mathematics and/or other curriculum subjects. These can also be differentiated through the choice of task to reason about or by the number of strands asked to complete.

ROLE OF THE SUBJECT LEADER

- Ensures teachers understand the requirements of the National Curriculum and helps them to plan lessons.
- Leads by example by setting high standards in their own teaching.
- Prepares, organises and leads CPD and joint professional development.
- Works with the SENCO and SLT.
- Plan CPD with colleagues with a view to identifying the support they need.
- Establishes 'Mastery for maths' across school and works alongside the NCETM to maintain high standards
- Discusses regularly with the Headteacher and the mathematics governor the progress of implementing the National Curriculum for Mathematics in school.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
- The subject leader for Mathematics is Mr Sumner.

OUTCOMES

This will result in pupils who:

- have a well-developed sense of number and where it fits into the number system (place value)
 - know by heart number facts such as number bonds, multiplication tables, doubles and halves
 - use what they know by heart to figure out numbers mentally
 - calculate accurately and efficiently, both mentally and in writing and paper,
 - drawing on a range of calculation strategies
 - recognise when it is appropriate to use a calculator and be able to do so effectively
 - make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
 - explain their methods and reasoning, using correct mathematical terms
 - can judge whether their answers are reasonable and have strategies for checking them where necessary
 - suggest suitable units for measuring and make sensible estimates of measurements
 - explain and make predictions from the numbers in graphs, diagrams, charts and tables
 - develop spatial awareness and an understanding of the properties of 2D and 3D shapes
- To provide adequate time for developing mathematics, maths is taught daily and discretely. However, application of skills are linked across the curriculum where appropriate.

See also Mathematics Policy 2021