



Athersley North
Primary School

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Mathematics Policy

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Mathematics Policy

Intent:

This policy states the aims and principles relating to the teaching and learning of Mathematics at Athersley North Primary School and clearly states how the school will fulfil its requirements of the National Curriculum 2014.

This policy should be read alongside other school policies such as the Teaching and Learning Policy, Feedback and Marking Policy, Health & Safety Policy & Procedures and the Equality Policy.

At Athersley North Primary school, we aim for every pupil to develop a secure understanding of mathematics, equipping them with the skills of calculation, reasoning and problem solving that they need in life beyond school. Our mathematics curriculum offers pupils a practical and engaging range of learning experiences.

We represent mathematical problems and numbers in different ways ensuring pupils access a range of concrete, abstract and pictorial representations. Staff and pupils promote and use a range of mathematical vocabulary which allows them to explain and discuss their understanding and give reasons for their choices.

Pupils are appropriately challenged and support is provided to ensure all pupils can access the Mathematics curriculum. We hope every pupil will enjoy Mathematics and see the value and importance of mathematics skills in everyday life

Implementation

This policy promotes best practice and establishes consistency in Teaching and Learning across the whole school. It aims to ensure that all pupils are provided with high quality learning experiences to develop pupil's life-long love of learning.

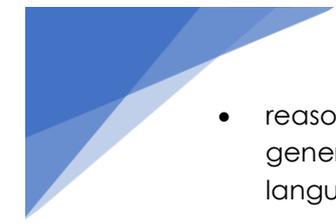
School Practice

The Curriculum progression plan for Mathematics ensures that there is a coherent and purposeful sequence to the teaching and learning of Mathematics. This plan follows the National Curriculum and outlines what pupils are expected to know, apply and understand the knowledge, skills and processes specified in the relevant programme of study.

Long Term Planning outlines the objectives being covered each half term within the school year. Long Term Planning is a fluid document as objectives may need to be moved around. These plans also include the Mathematics basic skills being covered in each year group.

What does this subject look like at Athersley North?

- We use the Mathematics Mastery approach (White Rose Maths) when teaching Mathematics. The National Curriculum for mathematics aims to ensure that all pupils:
- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems

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- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
 - can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

At Athersley North Primary School, pupils are entitled to a mathematics lesson everyday with a clear focus on direct, instructional teaching and interactive oral work with both the whole class and small mixed ability groups. All lessons include elements of fluency, reasoning and problem solving which are accessible for all Pupils. The curriculum is delivered by class teachers. Planning is based upon the new National Curriculum (2014).

Class teachers are responsible for the relevant provision of their own classes and individually develop weekly plans/slides, which give details of learning objectives and appropriate activities. Teachers use the White Rose Maths lesson by lesson overviews as a support tool to teach units/blocks.

Although planned in advance, they are adjusted on a daily basis to better suit the arising needs of a class and individual pupils.

What will the pupils learn?

Early Years Foundation Stage (EYFS):

The principal focus of mathematics In EYFS is to ensure pupils can count reliably with numbers from one to twenty, place them in order and say which number is one more or one less than a given number. They begin using quantities and objects and are introduced to addition and subtraction. Pupils solve problems, including double, halving and sharing.

Pupils are taught to use everyday language to talk about size, weight, capacity, position, time and money. They recognise and describe patterns and they explore characteristics of everyday objects and shapes using mathematical language to describe them.

Key Stage 1:

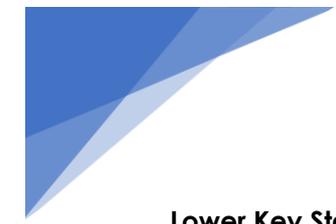
The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.

Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.



Lower Key Stage 2:

The principal focus of mathematics teaching in Lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2:

The principal focus of mathematics teaching in Upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number.

Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

How will this be taught?

Mathematics is taught 5 times a week across all year groups.

Teachers use a range of teaching strategies to engage the Pupils in Mathematics and ensure progress is made by all Pupils within a class; no set formula is used. A typical lesson would include:

- Both teaching input and pupil activities,
- A balance between whole class, guided grouped and independent work, (groups, pairs and individual work)

- Effectively differentiated activities/objectives and appropriate challenge.

Sometimes the focus for the session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. The focus of the session may vary for different Pupils depending on their learning needs.

We use the CPA approach at Athersley North. The CPA approach builds on pupils' existing knowledge by introducing abstract concepts in a concrete and tangible way. It involves moving from concrete materials, to pictorial representations, to abstract symbols and problems.

Mathematics basic skills sessions takes place 4 times a week. These are in place to improve fluency skills for Pupils from Year 1 to Year 6. All basic skills sessions include elements of counting, recapping previous learning from the current school year, recapping learning from the previous school year before it is introduced again and retrieving quick number facts that Pupils are expected to know in each year group.

At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home. The school has invested in Times Tables Rockstars which is an accessible learning platform that can be used to set differentiated rapid recall homework for pupils.

Differentiation for vulnerable groups: (SEND, Pupil Premium, etc.)

Contextual information is used by key stage teams at the start of the school year to ensure that topic/ themes are adapted to meet cohort specific needs. Differentiation will be evident through engagement activities, adult/peer support and scaffolded prompts. However, where necessary, some tasks are adapted to meet the needs of all pupils

Impact

Leadership and Governance evaluate the teaching and learning of Mathematics half termly through lesson visits, planning and book scrutinies and pupil interviews. Mathematics data is analysed to identify key groups of pupils and priorities/ areas for improvement so that these can be swiftly addressed.

Assessment is in accordance with the Early Learning Goals (ELG) in Foundation Stage, and the National Curriculum criteria for the end of Key Stage 1 and 2.

PUMA tests are carried out 3 times a year to support teacher assessment. Assessment for Learning (formative assessment) is recorded against statements from the national curriculum using the schools assessment software. This is to support planning and identify individual pupil and class gaps in knowledge. Assessment for Learning is carried out through questioning, discussion, observations and the marking of work. The marking of work undertaken during Mathematics sessions will be in accordance with the school's Feedback and Marking Policy. For further details refer to the Feedback and Marking Policy.

Assessment of Learning (summative assessment) is inputted by class teachers into the schools summative database (SIMS) 3 times a year to evaluate if pupils are working towards, at or above the expected standard for their year group. This provides the evidence of learning and achievement, enabling an accurate summative assessment to be made at the end of each school year, and at the end of Early Years Foundation Stage, Key Stage 1 & Key Stage 2.