

Amble Links First School
Mathematics and Calculation Policy



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Our aim is to provide a mastery approach to the teaching and learning of mathematics by:

- becoming fluent in the fundamentals of mathematics
- reasoning mathematically
- solving problems by applying their mathematics

A mastery curriculum focuses on depth of understanding rather than content coverage. Because a mastery curriculum is cumulative, once a concept or skill has been learnt, it is built upon and applied in the learning that follows. There are three key dimensions to deepening children's understanding:

- Deepening conceptual understanding
- Developing pupil's communication
- Encouraging pupils to think like mathematicians

Within Amble Links First School, we believe that every child should have the opportunity to build competency in every new key concept by taking on the approach of:

Concrete —————> Pictorial —————> Abstract

Concrete: Children should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. It gives children a deep understanding of mathematics.

Pictorial: Children build on the concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract: With the foundations firmly laid, children should be able to move to an abstract approach using numbers and key concepts with confidence.

Programme of Study in line with the National Curriculum statutory framework

The Early Years

The programme of study for the EY Stage is set out in the EYFS Framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems and to describe shape, spaces and measure.

The children will work practically, using concrete objects to practise and consolidate their learning within play as well as discrete mathematics lessons.

KS1/KS2

To ensure coverage, each Year group will follow a Long Term Plan where it sets out the broad area of mathematics to be taught at certain times of the year. This plan is flexible, i.e. if a 3-week block is not needed then adjustments can be made.

Mathematics lessons Monday through to Wednesday will focus on number while Thursday and Friday will focus on Data and Measure or Geometry. In KS1 and KS2, separate books will be used for each strand to show clear progression over a series of lessons.

Every daily mathematics lesson will include:

- Rapid recall of number facts: this will involve whole class work to rehearse, sharpen and develop mental and oral skills.
- Challenges which will enable the children to apply the skill being taught

Differentiation

Every child is entitled to access the same content as their peers, and challenge is provided through increased depth, rather than acceleration of content. Different learners do have different needs, but they do not need different content. When teaching for mastery, we do not differentiate through content. Every child is entitled to a deep understanding of the whole curriculum. The highest attaining pupils' study the same mathematical content as the lowest attaining – what is different is the way in which they are being taught and the level of support they are given. Where needed, all children will have access to concrete objects and manipulatives to enable them to access the whole curriculum.

Language

Language is vital to mathematics. In order to deepen children's mathematical understanding through language, there will be plenty of activities involving pupil talk, in pairs as well as small groups in every single mathematics lessons. Teachers will explicitly model mathematical talk, both to teach them the words and structures, and to demonstrate its importance. By requesting that they speak in full sentences, pupils get the opportunity to use the words themselves and hear them used by their peers.

Well planned questioning by the teaching staff is also key to enable the children to demonstrate their knowledge and understanding and to develop their mathematical language.

A vocabulary word wall will be used in each classroom to enhance mathematical talk as well as assist the children with their learning.

Planning and Assessment

Assessment is on-going throughout the lesson; this way misconceptions, consolidation and deepening of the children's understanding can be quickly addressed.

As well as this, at the start of each half term, the children will be assessed on areas on mathematics that will be taught over the course of that half term. The same test will be given to the children at the end of the unit of work to determine if progress has been made.

These assessments will focus on the three key areas of mathematics: fluency, reasoning and problem solving.

Schofield and Sims Mental Calculations also form part of our assessments. Each morning, children from Year 1 to 4 complete Schofield and Sims tests to: increase their mathematical vocabulary; fluency; reasoning and problem solving. Each child has a Schofield and Sims book that matches their ability therefore enabling them to work independently.

Role of the Mathematics Coordinator

The Mathematics Coordinator, with the Head Teacher, ensures mathematics is taught consistently and successfully across the school. The coordinator role includes:

- Ensuring the achievement and progress of all children across the school and to support class teachers in monitoring and assessing children
- Whole school monitoring, identifying areas of need within the school
- To have a clear understanding of what is happening in mathematics throughout the school release time will be given every three weeks to ensure the role is carried out effectively and efficiently.

This policy will be reviewed every two years or sooner if required.