Anglesey Primary School

Maths Policy

Linked Policies: Assessment & Feedback, Teaching and Learning, Curriculum.

Curriculum Statement

Anglesey Primary School is a vibrant and nurturing school community, where children are given the skills to become inquisitive, resilient and independent learners. Our curriculum provides a range of creative and inspiring experiences for all. This equips our children with the life skills to be happy, to flourish and to be successful…

Today, tomorrow and in the future.

Our maths curriculum is underpinned by the values in our curriculum statement as we aim for all pupils to experience deep, sustained understanding so that they become confident mathematicians. A successful mathematical education provides a foundation for understanding the world, the ability to reason mathematically, an

appreciation of the power of mathematics, and a sense of enjoyment and curiosity about the subject.

Our vision for Mathematics

- To promote a positive attitude towards mathematics in all pupils
- To ensure all pupils are engaged in and are enjoying exploring Mathematics
- To enable all pupils to find links between mathematics and other areas of the curriculum, including Science
- To ensure all pupils progress in mathematics and are challenged appropriately through an in depth understanding
- To use a wide range of concrete, pictorial and abstract representations to develop all pupils' relational understanding of mathematics
- To ensure all pupils are confident using mathematical vocabulary when reasoning about mathematics
- To promote a growth mind set in all pupils, particularly when Problem Solving

INTENT

We ensure that all children are taught the three aims of the national curriculum:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- 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.

The subject is split into distinct areas of mathematical learning; however connections across mathematical ideas and concepts are made at every opportunity to allow for fluency, a sense of number and to create conceptual understanding.

What is Fluency?	Fluency comes from deep knowledge and practice. This is the first stage of pupils' understanding. Fluency includes: conceptual understanding, accuracy, rapid recall, retention and practice The key to fluency is deep knowledge and practice and making connections at the right time for a child.

What is Reasoning?	Verbal reasoning demonstrates that pupils understand the mathematics. Talk is an integral part of mastery as it encourages students to reason, justify and explain their thinking. To encourage talk in mathematics, teachers use dialogic talk moves and key reasoning questions to ensure children are equipped to utilise prior knowledge when conjecturing. Pupils should be able to say not just what the answer is, but how they know it's right. This is key to building mathematical language and reasoning skills. This gives pupils the confidence to communicate their ideas clearly, before writing them down. Teachers then maintain a high expectation upon pupils to repeat and use the correct mathematical vocabulary to explain their understanding verbally and in their reflection comments. By also displaying the vocabulary and sentence starters during the lesson, pupils will be able to use this independently.

What is Problem Solving?	Mathematical problem solving is at the heart of the Mastery Approach. Pupils are encouraged to identify, understand and apply relevant mathematical principles and make connections between different ideas. This builds the skills needed to tackle new problems, rather than simply repeating routines without a secure understanding.

IMPLEMENTATION

Teaching and Learning - A 'Mastery' Approach

At Anglesey we follow a mastery approach to teaching children the knowledge and understanding they need to be competent mathematicians. In all year groups, concrete resources are used to enable children to manipulate, experience and see the learning. Children are encouraged to then represent these resources as images/markings allowing children to imagine and express ideas before attempting abstract strategies.

Concrete, pictorial, abstract (CPA)

CONCRETE	Concrete is the "doing" stage, using concrete objects to model problems. Instead of the traditional method of mathematics teaching, where a teacher demonstrates how to solve a problem, the CPA approach brings concepts to life by allowing pupils to experience and handle physical objects themselves. Every new abstract concept is learned first with a "concrete" or physical experience.

PICTORIAL	Pictorial is the "seeing" stage, using representations of the objects to model problems. This stage encourages pupils to make a mental connection between the physical object and abstract levels of understanding by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem. Building or drawing a model makes it easier for pupils to grasp concepts they traditionally find more difficult, such as fractions, as it helps them visualise the problem and make it more accessible.

ABSTRACT	Abstract is the "symbolic" stage, where pupils are able to use abstract symbols to model problems. Only once a child has demonstrated that they have a solid understanding of the "concrete" and "pictorial" representations of the problem, can the teacher introduce the more "abstract" concept, such as mathematical symbols. Pupils are introduced to the concept at a symbolic level, using only numbers, notation, and mathematical symbols, for example +, –, x, / to indicate addition, subtraction, multiplication, or division.

Planning

At Anglesey, all Year Groups use the White Rose scheme as a basis for their planning. This provides the yearly overview and Medium-Term planning for each year group.

Number:

A large proportion of time is spent reinforcing number to build competency and fluency. Number is usually at the heart of any primary mastery scheme of learning, with more time devoted to this than other areas of mathematics. It is important that pupils secure these key foundations of mathematics before being introduced to more difficult concepts.

This increased focus on number will allow pupils to explore the concepts in more detail and secure a deeper understanding. Key number skills are fed through the rest of the scheme so that students become increasingly fluent.

Planning should aim for all pupils to master the age group expectations of the National Curriculum by including rich, deep activities. Rapid graspers should not be accelerated through concepts, instead they should complete Challenge questions from NCETM, White Rose and I See Reasoning.

Times Tables

TT Rockstars is available for the practice of times tables as well as Number Fun Songs.

We teach times tables using the following progression:

Year 1	Be able to count in multiples of twos, fives and tens
Year 2	Be able to recall 2, 5 and 10 multiplication and division facts
Year 3	Be able to recall 3, 4 and 8 multiplication and division facts
Year 4	Be able to recall all multiplication and division facts up to 12 x 12
Year 5/6	Application of multiplication and division facts to problem solving

Children who learn their times table will be rewarded with a badge to both recognise their accomplishment and act as an incentive for other children.

IMPACT

Teachers and Teaching Assistants use AFL principles, WalkThrus and appropriate feedback methods during the lesson. Feedback is effective in ensuring pupils progress throughout a lesson or unit of work. It is recognised that live feedback in addressing errors and misconceptions is the most effective.

Progress is measured using a combination of evidence gathered in folders and termly assessments. This is then used to inform planning and to make the Teacher Assessment judgements at the end of each term.

Year group managers attend a termly Pupil Progress meeting to share data and to discuss pupils who will be placed into intervention groups to accelerate their progress. Priority will be given to children who have not made expected progress.

Monitoring

The Maths Lead alongside SLT are responsible for monitoring and evaluating the mathematics curriculum. Mathematics is monitored though a triangulation of observing the teaching and learning of lessons, folder moderation and Pupil Progress Meetings.

External Data

EYFS

	2019	2022	2023
% Achieving GLD	72%	71%	67%
National	79%	76%	77%

KS1

	2019	2022	2023	Nat Average
Expected or higher	59%	37%	67%	70%
Greater Depth	14%	3%	6%	16%

KS2

	2019	2022	2023	Nat Average
Progress Score	3.25 Well above Average	2.04 Above Average	3.44 Well above Average	n/a
Average Score	106	105	103	104
% expected standard	87%	86%	72%	73%
% higher standard	21%	15%	21%	24%