ACE Learning



Mathematics Policy

Date of Ratification	**Spring 2023**
Date for Review	**Spring 2026**

Intent

The national curriculum for maths aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through carried 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.

At ACE Learning, we believe that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Objectives

The academy's aim is for all pupils to have equality of opportunity:

- to ensure that all pupils follow a broad and balanced mathematics programme based on the requirements of the 2014 National Curriculum.
- to become fluent in the fundamentals of mathematics
- to enjoy mathematics, be successful and have a positive attitude to the subject
- to enable each child to develop within their capabilities; not only for the mathematical skills required for later life, but also an enthusiasm and fascination with maths itself
- to be able to demonstrate their skills and knowledge and talk about their work using appropriate mathematical language
- to develop thinking skills and logically apply their mathematical knowledge to solve problems in a range of contexts and to use mathematics as part of everyday life in school and at home
- to broaden their mathematical understanding through reasoning
- to use mental maths skills
- to increase children's confidence in all areas of maths so they are able to express themselves and their ideas
- to develop the practical understanding of the ways in which information is gathered and presented
- to ensure that all pupils are provided with interesting and challenging tasks that enable them to achieve standards commensurate with age appropriate expectations.
- to ensure that pupils can work individually, collaboratively in groups and within the whole class

Curriculum Progression

Learning is carefully sequenced to ensure the main objectives within each Key Stage are met. In EYFS we relate the Mathematical aspects of the children's work to the objectives set out in the Early Learning Goals and Foundation Stage Curriculum Guidance, which underpin the curriculum for children aged three to five. We ensure that all children are given the opportunity, at every stage, to broaden, use and apply their knowledge and understanding, with different mathematical concepts.

In Key Stage 1 and 2 we teach according to the National Curriculum programmes of study. The objectives are set out year-by-year for all year groups. The Planning and Assessment Tool (PATT) sets out these objectives which teachers plan and assess against. This ensures that by the end of each key stage, pupils know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Vocabulary development
Vocabulary has been deliberately structured so that each year group builds on previous learning. A list of expected vocabulary, for each year group, can be found within each school's approach to the teaching and learning of Maths.

Approaches to Teaching and Learning
The teaching staff take the following approach to ensure children understand and retain knowledge and skills in mathematics by following the **concrete - pictoral** - **abstract** approach to learning.
Teachers utilise the Mantle of the Expert approach to learning where appropriate to increase pupil engagement and provide stimulation through meaningful learning scenarios. Links are made to all subject areas where possible within each theme. These links are tracked closely so that over the course of both cycles in each learning stage, children are acquiring the skills that are appropriate for their year group.

See appendices for individual school approaches to teaching and learning.

Resources
Teachers will have access to an array of resources to ensure that this is achievable at all stages of learning throughout a child's school journey.

Health and Safety
In line with the school's health and safety policy, children are instructed in the safe use of all equipment. In particular, extra care should be taken when using heavy weights with balances on the floor. Care needs to be taken when younger children are using small apparatus such as counting objects. Children working outside the classroom will work in pairs or groups under adult supervision.

Assessment
Teachers are expected to regularly update the academy assessment system and to use this as an ongoing assessment document. Summative assessments will take part at regular intervals throughout the year for teachers to support their judgement and to be used as a gap analysis tool to support future teaching. Teachers will report on how well children are working against their year group's objectives for Maths.

Monitoring Impact
Monitoring of teaching and learning is a process that is essential to gauge quality of teaching to ascertain progress children/groups are making and to identify areas for improvement for individual teachers, year groups, key stages or specific subjects. It is also an opportunity to celebrate the strengths and successes of teachers and their pupils.

Pupils: The Maths leader will monitor a sample of work at set points throughout the year. For example, by looking at evidence in books, classrooms and via pupil voice during lesson observation. Teacher judgements will also be analysed.

Staff: Clear verbal and written feedback will be provided to teaching staff that are observed and targets set accordingly to identify next steps in their continuing professional development.

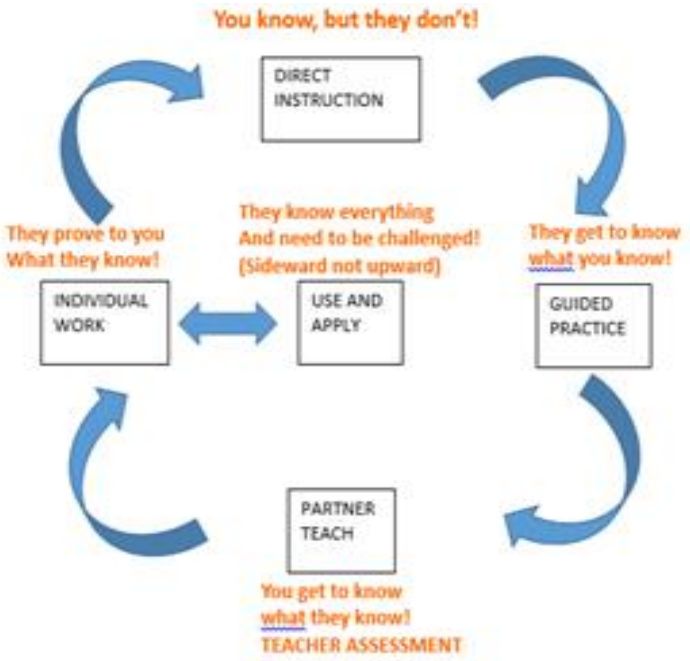
The implementation and impact of Maths will be recorded by the subject leader and reviewed regularly.

Appendix 1: Furley Park

Approaches to Teaching and Learning:

Furley Park uses a learning system of concrete objects, exaggerated actions and special vocabulary to help every child succeed and become a confident mathematician. The combination of objects, actions and vocabulary makes maths accessible to children from the youngest age. The learning system builds deep understanding and embeds a picture of the maths in children's minds, so they progress to thinking without the aid of physical objects; they refer to their mental images instead.

The teachers use this cycle as a structure to support teaching and assessment. It is very flexible and the teachers use it as a way of structuring the teaching of the whole class and also individual groups/children i.e. some children might need more guided practice, while other children will practice their skills through partner teaching and independent work while the teacher supports where necessary. When a child has developed a skill, they are encouraged to use and apply this knowledge in different contexts.



Language:

Throughout the school, children use a shared language (with actions) that is taught in every class to ensure that all children have the same learning experience. Teacher's should refer to the teacher guides to ensure that they are using the correct language in all their lessons.

Appendix 2 – Hamstreet Primary Academy

Approaches to Teaching and Learning

At Hamstreet Primary, teaching of mathematics should be regular and consistent. Lessons should be well planned following year group specific objectives and in line with White Rose schemes of learning. They should ensure systematic teaching of objectives and skills and always provide children with opportunities to problem solve and reason. Children should be able to see mathematics as a key fundamental session in which they require and will use in all different aspects of life. Objectives and skills should be revisited with the main focus being on retention and then application. Children should be taught to make clear links using different mathematical methods and should also be taught to become efficient mathematicians. Teaching should follow the fundamental approach of working concrete-pictorial-abstract to ensure complete understanding of every mathematical concept at every stage. Children should be challenged in their thinking and should be able to reason at an appropriate age to justify and explain their mathematical thinking and justifications.

Language

Following a White Rose approach to teaching, teachers should seek that they are familiar with the different approaches and methods which are expected of them to teach and the language that accompanies this. Language should be planned into lessons and used by all adults. Children should be encouraged to use this language when sharing or reasoning within mathematics.