

Tanworth-in-Arden Church of England
Primary School and Nursery



*In God's family, learning, loving,
growing to be our very best.*

POLICY:	Mathematics
APPROVED:	July 2021
DATE OF NEXT REVIEW:	July 2026
Signed	
	Chair of Governing Body
Date:	

Policy Statement for Mathematics

At Tanworth-in-Arden Primary and Nursery School we see maths as an essential life skill. We are committed to ensuring that children have a positive and meaningful experience of mathematics from Nursery to Year 6. The new mathematics curriculum offers a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Purpose:

The purpose of this policy is to describe our practice at Tanworth-in-Arden Primary and Nursery School in Mathematics and the principles behind which this is based.

Aims:

Our aim is to develop inquisitive and enquiring minds, encouraging pupils to become self-motivated, confident and capable in order to solve problems and investigations that will become an integral part of their future. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order to make genuine progress and avoid gaps in their understanding, which can provide barriers to learning as they move through education.

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
- **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

Teaching and Learning:

Early Years (Nursery and Reception Class)

The programme of study for the Foundation Study is set out in the EYFS Framework. Mathematics in the early years provides children with opportunities to develop their skills in counting, understanding and using number, calculating simple addition and subtraction problems and to describe shape, space and measure. These are delivered through short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration. There is a range of adult led and child initiated activities.

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.

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 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.

Teaching and Learning Strategies

The strategies employed in the teaching and learning of mathematics include:

- Linking new learning to prior knowledge and experience;
- Exploring learning through practical, concrete, pictorial experiences;
- Applying knowledge, understanding and skills in practical situations and problem solving;
- Creating meaningful cross-curricular links to embed the relevance of mathematics;
- Ensuring that teaching and learning styles actively excite and engage pupils in their learning;

- Adopting a range of teaching and learning styles which meet the learning needs of all pupils;
- Providing appropriate differentiation to ensure all children make progress.

Planning:

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The planning and assessment grids from White Rose Maths help to inform our planning. Our medium-term mathematics plans define what we teach giving details of the main teaching objectives for each term. They ensure an appropriate balance and distribution of work across each term.

It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught. We plan the activities in mathematics so that they build on the children's prior learning. While we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children to gain mastery at greater depth as well as mastery. The maths lead is responsible for monitoring coverage of the curriculum and ensuring that all children are taught the necessary objectives for their year group.

In all classes, children have a wide range of mathematical abilities. Tanworth-in-Arden Primary and Nursery School recognises this fact and provide suitable learning opportunities for all children by adapting learning where needed on an individual basis to enable all children to access learning. Teachers are also skilled at extending learning to ensure challenge for children working at a higher level.

Progression with Calculations

At Tanworth-in-Arden Primary and Nursery School, we have compiled a policy, guided by the White Rose calculation policy, which identifies and recognises that children need a range of strategies which are efficient, accurate and reliable. The children work through calculations using concrete, pictorial and abstract methods. Through our carefully developed policy, children are given many examples of strategies which enable them to learn confidently and fluently.

Interventions

At Tanworth-in-Arden Primary and Nursery School we monitor children's progress regularly and identify support where it may be needed at pupil progress meetings. Support is delivered first and foremost through quality first teaching but there is additional support available if required. This may include additional targeted support in class alongside their peers, in small groups, 1 to 1 tuition with a teacher or regular small group intervention support.

Mathematics and Inclusion

At Tanworth-in-Arden Primary and Nursery School, we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum to provide a broad and balanced education to all children. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make progress.

We strive to meet the needs of those pupils with additional needs, those with disabilities, those more able and those learning English as an additional language. When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively.

Assessment against the National Curriculum end of year expectations allows us to consider each child who may not making the progress expected and interventions or support for children is put in place to ensure progress of all pupils with a view to closing the gap between them and their peers.

Resources

Children have the opportunity to use a wide range of resources, such as number lines, number squares, Numicon, digit cards, cubes, rekenreks, small apparatus and method cards to support their work.

Assessment

Assessment in Mathematics follows the guidelines set out in the whole school Assessment Policy.

Assessment is a truly vital part of the teaching and learning process:

- Providing effective feedback to children, through marking and discussion;
- Actively involving children in their own learning;
- Informing next steps in teaching, through the setting of individual targets ;
- Recognising the profound influence assessment has on the motivation and self-esteem of children, both of which are crucial to learning;
- Involving parents and carers in their child's learning by sharing targets and topics;
- Informing parents and carers of their child's progress through parents' evenings and as part of a more detailed Summer Term written report.

Summative Assessment

Assessment within mathematics occurs throughout the maths lesson, enabling teachers/teaching assistants to adapt their teaching/questioning to meet the needs of all children. Teachers use their professional judgement, knowledge of progression in maths and progress over time to gather evidence over time to judge a child's attainment towards end of year objectives. Pupil's work is reviewed daily and will identify what they have been successful in achieving and identifying any misconceptions, or errors in calculations. We also move the children on in their learning through direct, timely feedback (See Feedback Policy).

Formative Assessment

This type of assessment is ongoing by each class teacher. It is used to inform future planning of the subject. At Tanworth-in-Arden Primary and Nursery School, we carry out ongoing assessment in mathematics by using White Rose and NFER assessment papers. Both internal moderation meetings and moderation meetings with local schools in our cluster are held which ensures a consistency of assessment for children secure in their year group.

Further examples of assessment involve:

- National statutory tests at the end of Key Stage One and Two;
- Making judgements about attainment and achievement of individual children against the cohort, local authority and national standards.

- Times Tables Tests in Year 2,3,4,5 and 6.

Monitoring and the role of subject leader

- Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader as well as the senior leadership team.
- They will also take a lead in policy development, purchase and organise resources, liaise with other maths leaders in local schools and keep up to date with local and national developments in the subject area.
- The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.
- The head teacher allocates regular management time to the mathematics subject leader so that s/he can monitor planning, review samples of children's work and undertake lesson observations of mathematics teaching across the school.
- The mathematics subject leader contributes to discussions about deployment and provision of support staff.

This policy will be reviewed every 5 years.