



# Sunningdale School

## **Subject Overview: Maths**

The school is ambitious in its pursuit of the best possible outcomes for its pupils. Sunningdale School is committed to providing a broad and balanced curriculum that remains wholly appropriate to the needs of each learner. A multi-tiered curriculum model is utilised so that content and pedagogy can be closely matched to the needs of pupils. This approach is arranged across 3 theoretical pedagogical pathways that begin on transition from the Early Years Foundation Stage and run through Key Stages 1 and 2 until the pupils' transition to relevant secondary provisions at the end of year 6. The pathways are the Pre-formal Pathway, the Semi-formal Explore Pathway and the Semi-formal Play Pathway.

The subjects taught within each curriculum pathway are closely matched to the developmental needs of the learners accessing that pathway, enabling them to develop the appropriate baseline level of knowledge, understanding and the skills required to access the next pathway approach or to prepare them for life beyond the school, secondary school, and adulthood.

Our Maths curriculum is coherently planned and sequenced towards cumulatively sufficient knowledge to build on prior learning and prepare pupils for their next steps. Strong links are made with Preparation for Adulthood (PfA) outcomes and Maths builds cumulatively towards supporting these: Employment, Independent Living, Community Inclusion, Health.

In our mastery approach to the teaching of Mathematics we believe that everyone can learn and enjoy mathematics. Mathematical learning behaviours are developed based on pupils' individual motivators and learning needs in order that they are able to focus and engage fully as learners who reason and seek to make connections. Significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning.

The key skills and knowledge we want to develop in Maths, are:

- **Cardinality and Counting**

Being able to count, not only by reciting numbers in the form of a list but also by demonstrating one to one correspondence – that is saying one number name for each item.

It also involves a deeper understanding that the value of a number demonstrates the 'howmanyness' of things.

- **Comparison**

Being able to make comparisons between groups, quantities, and numbers. This involves an understanding of 'worth' and of 'more' and 'less.'

- **Composition**

Composition involves understanding how numbers are made from other numbers and how smaller numbers can be added together to make bigger numbers.

- **Pattern**

Understanding mathematical relationships by identifying and understanding different types of patterns.

Initially, this will likely be with colour and shape, but will ultimately lead to the ability to identify mathematical patterns.

- **Shape and Space**

Wider mathematical thinking is developed through an awareness of shapes, their similarities, and differences and how they can fit together.

- **Measurement**

Comparing different aspects and properties of measurement such as height, weight and volume. Eventually, this will lead to comparison using standard units.

Those pupils who are not yet able to access these early mathematical concepts will develop their understanding of precursor concepts through the areas of Engagement. These concepts anchor a child's mathematical thinking and are essential for the growth of further mathematics. Deep and meaningful engagement with these concepts must come before a child is ready to attend to the early mathematical concepts.

- **Attributes** – Exploration of the properties or qualities of objects that allow us to describe and classify the world around us. Experiencing and developing understanding that:
  - We perceive attributes of the world around us through our senses.
  - Attributes can be used to group.
  - Language allows us to describe attributes with increasing precision.
- **Comparison** – Realising sameness and difference. Experiencing and developing understanding that:
  - Comparison depends on recognizing attributes.
  - Recognizing attributes makes it possible to notice sameness and difference.
  - Noticing sameness and difference allows for matching, sorting, ordering and problem-solving.
- **Pattern** – Exploring rhythm, sequence, and regularity that allows for anticipation and prediction. Experiencing and developing understanding that:
  - A pattern involves a set of defining elements.
  - Regularity occurs when the defining elements recur in sequence.
  - When a regular sequence begins, there is an expectation that it will include the defining elements.
- **Change** – realisation that something becomes different. Experiencing and developing understanding that:
  - Change may be qualitative or quantitative.
  - The difference may be the result of joining, separating, or of transforming.
  - To respond to change, the difference between the initial condition and the changed condition must be recognized.

Understanding/ Developing Maths supports pupil's development and understanding of British Values

The school promotes British Values through our spiritual, moral, social, and cultural learning that permeates through the school's curriculum and supports the holistic development of the child so that they can 'be more', and skills learnt can be used in a variety of contexts.

Maths supports pupils' ability to be responsible, respectful, active citizens who contribute positively to society, developing their understanding of fundamental British values, including (but not limited to);

- recognising the ways in which we are different and the ways in which we are the same, developing understanding of the concept of equality and celebrating diversity.
- using mathematical concepts to facilitate sharing and fairness,
- understanding the use of number in the democratic voting system,
- development of critical thinking skills using maths which will help develop pupil resilience to exploitation and radicalisation.

### **Our Curriculum Intent: Maths**

The Maths curriculum has been carefully designed and sequenced to provide pupils with a secure, coherent knowledge of key mathematical concepts which can be applied meaningfully to their daily lives. At all stages, the curriculum links to previous content and concepts and identifies later links.

The Maths curriculum is carefully planned to ensure concepts are taught in optimal order to support children's understanding. Medium term plans are tailored to the needs of each class, adapting the learning areas and opportunities to the interests, needs and level of learning of the class. They consist of basic mapping of concepts, resources, activities, and content link to the termly curriculum connector theme. This is actioned at a pupil level through the use of a highly personalised planning system supported by specific Personalised Learning Plans (PLPs). PLPs are used these to set very small stepped targets across a range of areas (including communication, interaction, emotional development and social skills) so that pupils make consistent progress towards their aspirational targets outlined in their Education Health and Care Plan (EHCP) and linked to Preparation for Adulthood outcomes.

At the earliest stages, the sequence of learning begins with engagement with the mathematical pre-cursor concepts within the pupils' holistic curriculum. Pupils will explore attributes through sensory object play, visual and auditory activities and begin to show realisation of sameness and difference in these attributes and recognise when they change. They will begin to show anticipation of rhythm and sequence.

As Mathematical skills become more developed children will begin to apply these skills within their exploration of the mathematically rich classroom. Developing anticipation of patterns in sound and movement through physical action games, musical instruments, singing and chanting. They will begin to understand and predict routines in their own lives to build an early understanding of sequence and patterns: first we... then... now...

Pupils will begin to investigate concepts of shape and space, Exploring and arranging objects of different shapes, sizes and weights – Stacking and knocking down, posting things through holes, playing hiding games and covering things up.

Staff will model mathematical language in songs, rhymes and play and will use their knowledge of individual motivators to engage pupils with the number, shape and position of objects around them or in books. Even before children begin to use these words for themselves, they look and listen with interest to adults using them.

As their understanding of mathematical concepts becomes more secure, pupils will begin to apply the principles of counting in practical activities and functional learning activities. They will begin to demonstrate an understanding of more and less and the relative 'worth' of a number or a quantity. They will develop a very strong sense of numbers to 10, develop their understanding of the link between numbers and quantity and investigate the partitioning of quantities into smaller parts. They will know how numbers relate to one another and be able to compare and order them and will explore how quantities change when items are added or taken away.

Pupils will demonstrate understanding of spatial concepts and use the language of position and direction. They will begin to give and follow instructions to navigate simple routes.

They will be able to identify shapes and use mathematical terms to describe them. They will make 2D maps and 3D models. They will compose and decompose shapes, knowing how shapes combine to make other shapes.

Our mathematics curriculum prepares pupils for future learning and transition to Key Stage 3 by giving a sound and secure understanding of the fundamental mathematical concepts which serve as the foundation for further mathematical learning. By providing rich opportunities to apply these concepts in meaningful, functional contexts, we aspire to enable our pupils to apply their mathematical understanding in the wider community to allow them to live fulfilling and independent lives, both now and in adulthood.