

Mathematics Procedures 2021-2022

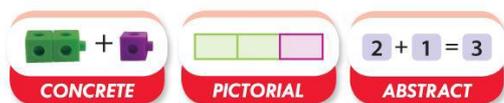
Desire to Learn, Learn to achieve

When teaching children maths, it is our intent that:

It is essential 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 develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. Our belief is that children are entitled to high quality teaching of maths with well-trained adults. Resources should be varied and available to support learning.

The implementation of our Maths Curriculum:

At Star Academy, staff plan and teach using the White Rose scheme for Key Stage 1 and 2. This scheme supports the CPA approach (concrete, pictorial, abstract) to teaching and learning of mathematical concepts.



CONCRETE

Concrete is the “doing” stage, using concrete objects to model problems. 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.

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.

Maths at home

Children are asked to complete homework through the Doodle maths website. Teachers are able to set tasks that link to the current learning for children to complete at home. Children can also use Doodle to play games and consolidate learning in any area of maths. Teachers are able to see what children have completed and where any misconceptions are.

Early Years

In the Early Years, Ten Town is used by the staff to support the understanding of number. Numbers are introduced through characters to improve number recognition and formation. There is an online platform too that brings the characters to life and supports the learning for the children. This can also be accessed at home. Children use resources to support their learning and deepen their understanding. Learning in maths takes place both indoors and outdoors.

Assessment

We assess during our teaching sessions using summative assessment for learning techniques: assessing knowledge and skills against the relevant objectives. Active marking during lessons addresses any misconceptions in learning and allows further scaffolding where needed.

In White Rose, there are opportunities and resources allowing assessments to be completed at the end of each block of learning.

From Y1-Y6, we also use NTS formative assessment tests at the end of every term. These are analysed to inform next steps through the Rising Stars MARK/ Shine scheme.

Environment

Classrooms and learning areas support and enrich the learning of all children. As well as being rich, vibrant and welcoming, the environment is an important way to engage children in their learning. A maths working wall promotes the learning that is being done and allows the children a point of reference if they need to check on prior learning to support their independent work.

Working with parents

Parents and family members are vital to, and considered as partners in their children's learning and progress: we actively encourage their involvement through:

- Discussions about their child's learning
- Parent consultations
- Workshops to share ideas to encourage maths at home
- The use of Doodle maths at home to complete home learning

Monitoring and Evaluation

The senior leadership team (assisted by Academy Transformation Trust) are responsible for monitoring the standards of teaching and learning, for supporting colleagues, being informed about current developments and for providing a strategic lead and direction at Star Academy Sandyford. The SLT and Governors are responsible for school self-evaluation (overall effectiveness evaluation) and use monitoring and evaluation to identify strengths and areas for development in order to drive the Academy Improvement.

The impact of our maths curriculum:

By the end of Year 6, we aspire that a Star Academy mathematician will have developed a bank of efficient and accurate skills that can be used to calculate effectively. These will have been underpinned by the C-P-A process so children understand rather than just do, which ultimately will allow children to identify when answers do not make mathematical sense. Children will be able to apply these calculation skills and understanding of other areas to become confident and resilient problem-solvers with the ability to reason and articulate their ideas mathematically. Due to the embedding of fact sentences, children will have the language to be able to justify, reason and explain their answers.