**White Rose Maths**

At Barnston, Maths is taught through a mastery approach, using the ‘White Rose’ scheme of work. Maths mastery is a teaching and learning approach that aims for pupils to develop deep understanding of maths rather than being able to memorise key procedures or resort to rote learning. The mastery approach is a child-centered approach and is then enhanced through challenges from a range of high-quality sources. Within Maths lessons, we use White Rose resources, but also create resources and use NCETM to create engaging and interesting lesson. Learning is embedded through a spiral curriculum by incorporating the use of resources, problem solving and group work. Our White Rose Maths curriculum systematically builds mathematical knowledge and skills. This means that our children can understand and draw on the knowledge, concepts and procedures they have already learned, and apply these to where they are now in their learning, as well as in the next stage.

Alongside White Rose Maths, we incorporate mathematical reasoning and problem solving to solve practical problems in everyday life in a variety of ways including the use of Test Base, NCETM and other high quality sources to promote problem solving, not just in the Maths lessons, but across the curriculum.

The White Rose schemes of learning are designed to support a mastery approach to teaching and learning, as well as to support the aims and objectives of the National Curriculum.

The White Rose schemes have number at the heart and a lot of time is spent reinforcing number to build competency. White Rose believes that all children, who are introduced to a concept, should have the opportunity to build on their abilities by following a concrete-pictorial-abstract approach (CPA)

**Concrete is the “doing” stage**.

During this stage, students use concrete objects to model problems. Unlike traditional maths teaching methods where teachers demonstrate how to solve a problem, the CPA approach brings concepts to life by allowing children to experience and handle physical (concrete) objects. With the CPA framework, every abstract concept is first introduced using physical, interactive concrete materials and base ten and counters

For example, if a problem involves adding pieces of fruit, children can first handle actual fruit. From there, they can progress to handling abstract counters or cubes which represent the fruit.

**Pictorial step of CPA**

Pictorial is the “seeing” stage. Here, visual representations of concrete objects are used to model problems. This stage encourages children to make a mental connection between the physical object they just handled and the abstract pictures, diagrams or models that represent the objects from the problem.

Building or drawing a model makes it easier for children to grasp difficult abstract concepts (for example, fractions). Simply put, it helps students visualise abstract problems and make them more accessible.

**Abstract step of CPA**

Abstract is the “symbolic” stage, where children use abstract symbols to model problems. Students will not progress to this stage until they have demonstrated that they have a solid understanding of the concrete and pictorial stages of the problem. The abstract stage involves the teacher introducing abstract concepts (for example, mathematical symbols). Children are introduced to the concept at a symbolic level, using only numbers, notation, and mathematical symbols (for example, +, –, x, /) to indicate addition, multiplication or division.

White Rose Long Term Plans

<https://whiteroseeducation.com/resources?year=year-1-new&subject=maths>

Parent information

<https://whiteroseeducation.com/parent-pupil-resources/maths>

White Rose 1 minute maths app information

<https://whiteroseeducation.com/1-minute-maths>