

An Introduction to the Addition, Subtraction, Multiplication and Division Curriculum Calculation Policy and Progression Documents

At Thorney Island School we follow the White Rose Scheme of learning. This ensures the children access a mastery curriculum. One of the key aspects of this approach is the use of concrete, pictorial and abstract representations (the rationale for which is set out within the mathematics policy). With regard to the four operations (addition, subtraction, multiplication and division) the concrete, pictorial and abstract approach is still used, although as set out within the National Curriculum, within certain year groups children are expected to be taught to use a formal written method for the four operations. As a result of this, within Key Stage 2, formal written methods for addition, subtraction, multiplication and division are taught weekly and discreetly, often by the PPA cover teacher. This ensure that the children at Thorney Island School have a secure knowledge of these vital life skills. During the teaching of the four operations the concrete, pictorial and abstract approach is still used, although as set out within the *OFSTED research review series: mathematics*:

‘Reliance and subsequent dependence on manipulatives and associated aids can hinder progression through the curriculum. The implications are that teachers need to give pupils enough time to consolidate learning and they need to plan for how pupils will move away from using the manipulative. This will help to avoid pupils relying on manipulatives to work around gaps in core knowledge that might become barriers to learning later.’¹

Therefore it is likely that children further along the learning pathway, especially those in older groups, will not need to use concrete and pictorial resources to such an extent. We are however mindful of the fact that our teaching should be adaptive for all learners and therefore any learner, wherever they are within their learning journey, may need to rely more on concrete or pictorial representations at time.

With this in mind, we have chosen to share the *Calculation Policy for Addition and Subtraction* and the *Calculation Policy for Multiplication and Division* with our parents and stakeholders on the website. We hope that this will be informative as methods that can be used to support learning and the rationale behind what we do, as well as showing curriculum progression for these key skills.

¹ OFSTED (2021) *Research Review Series: Mathematics*. Available at: <https://www.gov.uk/government/publications/research-review-series-mathematics/research-review-series-mathematics> (Accessed 30th December 2022)