



Middlefield Primary Academy

Maths Intent, Implementation, Impact Statement

Intent

The purpose of education at Middlefield Primary Academy is to develop each child to 'be the best that they can be' at school and beyond. The aim is to nurture, inspire them and allow them to flourish with the opportunity to choose their own future.

The question often asked by many parents and children is why maths? Why do I need to know this? How is this going to help me? Maths is woven into every aspect of life, whether we realise it or not, from grocery shopping, to playing a video game or getting a train/bus. Maths is at the heart of helping to develop opportunities and gain a better understanding of the world. It has been shown that those who do not have a firm numerical understanding find themselves at a greater disadvantage in the work and social environments.

Maths provides a powerful universal language across the world; it is a form of communication that is the same in every country. Using the fundamentals of maths we are able to be creative and solve problems as many have over centuries. In all, maths empowers children to 'be the best that they can be' by teaching them resilience and reflection, not just now but beyond school, giving them the knowledge and skills to do so through a deep understanding of number and fluency in calculations.

We use the White Rose Maths scheme of learning and follow the small steps to deliver a broad curriculum. In using White Rose, we intend to build on the children's fluency – which underpins all maths - developing automaticity and ultimately reducing cognitive load. In doing so, children will be able to master their own learning and think more deeply, reasoning mathematically, problem solving and making connections between mathematical concepts. Maths knowledge will be harnessed through a CPA approach (concrete, pictorial, abstract). The White Rose small steps provide a coherent and sequenced curriculum that allows children the opportunity to achieve in maths.

Implementation

At Middlefield Primary Academy, we use the White Rose scheme of planning for the small steps and the representations that expose the mathematical structure and ultimately deepen the children's learning. The schemes of learning are used from EYFS to Year 6. White Rose Maths is a cumulative curriculum in which mathematical topics are taught, built upon and revisited through other topics throughout the year; each topic allows children to deepen their knowledge, apply concepts from previously taught topics and drip feeds other concepts before explicit teaching. Number is foundational in every year group and underpins the learning; it is explicitly taught first before revisiting through all other key concepts. We teach for mastery using the CPA approach (concrete, pictorial, abstract) with these resources available to all. This is used in daily lesson and in the whole class feedback (see marking policy) where children have the option to address misconceptions and apply mastery as a next step. In some cases, teachers may revisit small steps for more than one session in order to ensure that misconceptions have been addressed so that the children can move through the curriculum at broadly the same pace.

Lessons are planned based on the White Rose SOL (Scheme of Learning); Teachers use the SOL to align the lesson with curriculum, identify possible misconceptions and key questions for progressing learn. The SOL also offers teachers models to expose the mathematical structure, deepening children's learning. Using assessment for learning, teachers can be adaptive in their approach to the small steps and the scheme, deciding where more time is required. Children are introduced to new learning through modelling from the teacher using the CPA approach. For independent practise, children are given fluency, reasoning and problem-solving questions suitable to their individual level – teachers assess this during lessons and adapt their teaching accordingly. During the lesson, teachers work in small groups and live mark to provide individual verbal feedback; those children who have worked with a TA may have their work marked also and verbal feedback given to the teacher about children's ability. All other work is marked after the lesson to assess who has met the objective and who requires further support. Work may also be peer marked in the lesson with the teacher reviewing the work after and assessing the learning objective. Further support follows as needed with either teacher or TA – adults/children may use practical resources to address misconceptions. Teachers use the Flashback Four as retrieval at various points throughout the week as either a morning or afternoon task – this retrieval practise helps to secure children's learning from previous topics.

To develop fluency in maths, teachers in EYFS and KS1 are following the NCETM Mastering Number programme, which has a great focus on securing automatic, freeing children's brains to focus on more complex problems and reducing cognitive load. EYFS will use NCETM to teach all number objectives. Teachers complete the lesson minimum 3 times a week for 10 minutes alongside standard maths lessons. The children move through the work at the same pace. In doing so, the children deepen their learning and follow the mastery principles. The level of discussion and oracy supports the problem solving and reasoning element. Teachers in KS2 may identify children who have difficulty with fluency and implement this scheme as an intervention. Furthermore, in KS2 Times Table Rockstars, a scheme which supports the learning and rapid recall of times table facts, is undertaken 3 times per week using printed booklets. Teachers will ascertain the level of the children in their class using the baseline and print workbooks according to the area of development. The aim is that broadly children complete the same booklet, moving through the workbooks as a cohort, however with SEND in mind, there may be times when customised workbooks are used.

At Middlefield we are committed to inclusivity and ensuring our SEND children make appropriate progress. Firstly, this is achieved through high quality teaching; teachers will choose work where appropriate using AFL (assessment for learning) and adaptive teaching. Consideration is given to the children's individual levels, ADPRs and EHCPs and as such it may be necessary for teachers to vary the curriculum from that of their year group and cover objectives multiple times.

Impact

Ensuring the curriculum is having the greatest impact is ascertained through teacher AFL in each lesson and formal summative assessments at the end of each unit and term.

In each lesson, teachers use their judgement to gauge the learning of the individual children; this is obtained through observation of children, small group work, conversations and marking books. Using this information teachers can make an assessment as to whether further support is required for individual children or if the planning needs to be adjusted.

At the end of each White Rose unit children complete end of unit assessments to demonstrate their learning from the unit. This information is recorded by teachers and children who are not secure are identified for support either as intervention or scaffolding when revisiting/consolidating units.

NFER assessments are completed in Years 1, 3, 4 and 5 in Autumn, Spring and Summer; in Years 2 and 6, past SATs papers are completed. These are completed in order to track progress throughout the year and through their learning journey at Middlefield. The results of these assessments are recorded on Insight Tracker. Question level analysis is used to support future planning and identifying where children require support.

In Year 4, children undertake the Multiplication Tables Check. Throughout Year 3, 4, 5 and 6 children take baseline assessments as part of their work books in Times Table Rockstar. They will redo this assessment multiple times throughout the year to make judgements on progress and identify areas of development.

Throughout the year, teachers will conduct a 'Pupil Book Study' whereby they review previous learning and hold a focus group with some children from each year group to review sequencing, vocabulary and depth of learning.

Ultimately, maths at Middlefield can be identified as having a great impact through the children's attitude toward their learning. Children are proud of their work and are keen to be the best that they can be, in line with our school motto. Children feel confident about what they are learning and confident that they have the support at Middlefield to progress through our curriculum and be successful mathematicians.