



The Milford Academy Maths Curriculum Design

Curriculum Intent

Here at The Milford Academy, it is our intent to deliver an ambitious and challenging curriculum within a quality and enriching environment. It is our intent that our teaching of mathematics enables each child to develop their learning, achieve their full potential and thus be equipped with the mathematical skills and understanding required for later life. We want Milford pupils to acquire confidence and enthusiasm in maths itself so that they believe in their capabilities, are willing to challenge themselves and can express their mathematical thinking. We want to break down the barriers of maths and provide pupils with methodical strategies so that they view mathematics as smaller, manageable problems rather than one overwhelming task.

It is our aim to provide our pupils with prescriptive, structured lessons which provide opportunities to develop their skill set. Number sense and fact fluency is fundamental and for this reason it is intertwined into each session to ensure that pupils are provided with the opportunities to make connections with their maths and revisit key skills on a regular basis. This allows us to develop the retrieval and recall skills of our pupils so that pupils develop conceptual understanding and apply knowledge rapidly and accurately.

We value and encourage, across all classes, talk opportunities and a concrete, pictorial, abstract path to learning which empower pupils to build the resilience and skills required to be real life problem solvers and to be fluent in both number and communication skills. We want our pupils to use jottings in their maths work, be able to reason and explain by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. Teaching staff support this vision by

using a range of questioning styles to develop higher order thinking and the metacognition of our pupils.

Our skills-based approach enables us to provide targeted support and interventions where necessary. We aim to apply our mathematics into our everyday lives, providing cross-curricular links where possible. Staff seek out opportunities for our pupils to participate in engaging and challenging maths events across the city and nationwide, for them to apply their learning whilst developing their experience of real-life contexts.

Curriculum Implementation

In the Foundation Stage the teachers plan a 10 - 15 minute whole class daily maths session around the objectives outlined in the EYFS curriculum using the mastery approach. These lessons consist of teacher led questions and pupil engagement is through talk partners. The plenary of these sessions consists of reasoning elements where the pupils can apply their knowledge. The children are also given opportunities to regularly engage in mathematical activities during child-initiated learning time. Over the course of two weeks, there is one focused maths activity and one challenge (these occur on alternative weeks). The focused activity is differentiated and the maths challenge is based upon the 'Maths Everyone Can' White Rose Maths analogy. Numberblocks are planned into the lessons and every pupil in the Early Years Foundation Stage (EYFS) has a maths/topic book from which both the teaching staff and pupil utilise.

Foundation Stage staff also support the children to develop their mathematical thinking, vocabulary and knowledge in all areas of the foundation stage learning environment. As part of the daily maths input, the teaching staff will work with a focus group of children each day. Where children are identified as needing extra targeted support, this is put in place and reviewed for impact.

In Key Stages 1 and 2, each class will have 5 daily mathematics lessons. The lessons follow a 3-part structure and the starter to each allow children the time to practice and improve the efficiency of their

skills that they have been taught and to revisit and deepen the security of previous learning.

Planning

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). Across the school, we use White Rose Maths as our scheme of learning.

The Foundation Stage

- The long-term plan is from the curriculum objectives outlined in The Early Learning Goals. This is used alongside the schemes of learning from White Rose Maths.
- The medium-term plans are from White Rose Maths.
- The short-term plans are adapted from White Rose Maths and EYFS Mastery Programme.

Key Stage 1 and 2

- The long-term plan is from the schemes of learning from White Rose Maths.
- The medium-term plans are from White Rose Maths.
- The short-term plans are adapted from White Rose Maths and National Centre for Excellence in the Teaching of Mathematics (NCETM) materials.

We plan and deliver our lessons using White Rose Maths and NCETM. The rationale behind the use of these is due to their aim of delivering mastery approached lessons whilst providing clear guidance, logical progression and a systematic approach to units of learning and objectives. The resources also use concrete, pictorial and abstract models and examples which are imperative.

The long-term and medium-term plans are reviewed yearly by each year group, and adapted accordingly, particularly in light of Covid-19 and national lockdowns.

Short-term planning is completed each week. This includes: clear objectives, teaching sequences, differentiated activities, key questions, two or more problem solving or reasoning activities a week, a weekly arithmetic session (dependent on year group) and times tables practise.

Meeting the needs of all pupils

At The Milford Academy we teach mathematics to all children, whatever their ability. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

We use a variety of intervention styles to support children's mathematical development. This enables us to ensure that all children make good progress and are working towards securing their year group's objectives and national expectations. This support can take one of three forms;

Pre teach: children are taken for a 15 - 20 minute session before the lesson with the teacher. During this time, the children discuss key vocabulary and the learning they are going to encounter within the main maths lesson. This builds the children's confidence and engagement within the main lesson.

Same day/follow up intervention: children that have been identified during the session as needing some extra input/support will be taken during the afternoon (or later that week) by a member of teaching staff. This is to address misconceptions and ensure that they are ready for the next maths session, allowing all children to keep up with the core learning.

Specific intervention: where children need more intensive support to help them to meet specific gaps in their learning, which are limiting their ability to progress at the required rate, children will follow a specific named intervention. This targeted intervention will be devised with SMART targets and tracked by the facilitator of the session. Their progress will be measured before and after the set number of intervention sessions (no more than a maximum of 8) and the impact

recorded. Intervention records will be logged on SIMS and both the Special Educational Needs Coordinator (SENCO) and subject coordinator will be aware of these.

Assessment

Assessment against national standards drives the areas of mathematics that we prioritise and this assessment leads to carefully differentiated work.

Short-term and diagnostic assessment

This type of assessment will be a part of every lesson. The short-term assessment will involve the teacher checking the children's understanding throughout the session. Children who need extra support/clarification on the subject will then be targeted by the teacher or the TA during the session or before the next session, where possible. The short-term assessment also informs the planning for the following lesson.

Teaching staff will complete a lesson feedback form at the end of each lesson, alongside support staff. Using their Assessment for Learning (AfL), any successes and/or misconceptions will be noted so that sequences of learning are adapted to meet pupils' needs. Any specific children who were successful in the lesson and demonstrated great effort will be noted, alongside any children who had difficulties. This is to ensure that staff are deployed effectively, address misconceptions and move learning forwards.

Arithmetic

All children from Year 2 to 6 will complete an arithmetic task at least every other week. This is used to identify gaps in the children's understanding of maths so these can be addressed in the fluency sessions in the following week.

Times Tables

All children from Year 2 to 6 will complete times tables assessments each half-term. These will be differentiated for each year group and in line with National Curriculum multiplication and division objectives. These assessments will be undertaken in class and the data

uploaded onto Times Tables Rock Stars (TTRS) for analysis. Regular TTRS sessions in KS2 (3 per week) will also be utilised to support and develop pupils' knowledge of multiplication and division, particularly the times tables facts up to 12 x 12. In June each year, the children in year 4 will also sit the Multiplication Tables Check (MTC).

Moderation

To ensure there is consistency in marking and teacher judgement, staff in each year group and phase will meet termly as part of our moderation process. A sample of books will be taken to the meeting so that staff can discuss and agree on the attainment of a pupil against the National Curriculum. In addition to looking at the National Curriculum, staff will utilise the DfE Ready to Progress Criteria to look at next steps and how to evidence those children working towards or at GDS. Phase Leads will also attend moderation meetings and the Maths Lead will attend the half-termly NST Maths Network and feedback key information and resources.

SATs (Standardised Attainment Tests)

The children in Year 2 and 6 must complete the SATs tests in June, unless they are exempt. In these specific year groups, we use this style of summative assessment throughout the year to ensure that pupils are familiar and can demonstrate their full potential during this final assessment.

Curriculum Impact

Learning

Planning, teaching and assessments have impact on progress and learning through:

- Ensuring coverage is met
- Providing lessons that encourage enthusiasm and enjoyment
- Identifying and acting upon misconceptions
- Setting challenge to stretch understanding
- Swift and appropriate action/targeted intervention being taken by teachers to meet pupil needs
- Providing environments that celebrate and encourage investigation and perseverance

- Consistent review of planning, assessments and progress
- SEND, disadvantaged and vulnerable children closely monitored and appropriate interventions being put in place
- Quality teaching
- Quality continuous professional development (CPD) for all teaching staff
- Developing and embedding understanding and skills that show a change in long-term memory can be applied in different contexts and time periods.

Monitoring

To ensure the mathematics curriculum is being delivered effectively, there is a maths monitoring day planned into each term. Regular learning walks, monitoring of books and classroom environments, pupil interviews and teaching observations are conducted. Evidence gathered from these are then evaluated, triangulated and analysed and shared with staff to highlight our strengths and identify areas of development. These areas for development are quickly identified so that appropriate, bespoke and additional training is provided for staff to ensure our standards and expectations remain high.

As a school community, evidence-based research and sharing of best practice strategies underpins our CPD. Regular staff meetings take place to ensure that our shared vision and aim are regularly reviewed and lines of communication remain clear between staff across each phase. All of the above factors will contribute to raised levels of attainment in individual pupils and cohorts across the school.

Outcomes

At The Milford Academy, the outcomes in maths at the end of Key Stage Two have historically been in line with the national average. In 2019, there was a decrease in this end of key stage outcome and the school went below the national average (there were a number of factors relating to this fall in data). Due to the drop in data, there has been an increased focus and thorough analysis of the curriculum we offer to ensure that it is rich, challenging and ambitious to drive our standards forwards. There is a clear expectation for high standards of both our staff and pupils to ensure that the majority of pupils at our

school reach the expected standard, with an ambitious number of pupils attaining greater depth standard.

Sarah Hickling August 2022