



Motivate and Celebrate Success

Mathematics

at Mount Charles School

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Curriculum Statement

Intent

At Mount Charles, we follow a mastery approach to the teaching of the mathematics objectives laid out in the National Curriculum. It is our belief that all pupils can achieve and succeed in maths. In order for this to happen, our curriculum has been planned and implemented to ensure that every child has a sound understanding of the intricacies of mathematics. We aim for pupils to leave our school equipped with the mathematical skills and knowledge to enable them to thrive in life.

Our aspiration is for every child to see themselves as a mathematician, transferring and applying their mathematical knowledge to different contexts. We aim for all pupils to demonstrate a confident attitude towards tackling mathematical problems both in and out of the classroom.

Our Maths lessons will:

- Develop confident, resilient learners who are not afraid to take risks
- Ensure all children are engaged with no passive learners
- Develop core foundational and conceptual understanding with fluency (substantive knowledge) before progressing onto higher level thinking (disciplinary knowledge)

Implementation; Teaching and Learning

Power Maths

To ensure consistency and progression across the school, our main teaching and planning resource is the DfE approved Power Maths scheme, which is fully aligned with White Rose and the National Curriculum. Power Maths is a clearly structured teaching and learning process that helps us make certain that every child masters each maths concept securely and deeply. For each year group, the curriculum is broken down into core concepts, taught in units. A unit divides into smaller learning steps – lessons. The sequence of lessons is progressive and designed to enable pupils to understand core concepts and grow in confidence.

Power Maths brings together calculation, reasoning and problem solving into a series of lessons, which ensures that secure links are made and that prior knowledge is re-visited and applied throughout. Pupils are encouraged to solve problems through the use of concrete resources, pictorial representations and abstract thinking. Pupils have access to manipulatives to aid them when tackling new concepts. Power Maths lessons adopt a metacognitive approach of ‘I do, We do, You do’ using ‘Discover, Share, Think Together, Independent Practice’.

The Maths Learning Journey of ‘Now, Next and Then’ is clearly displayed in all classrooms which helps mathematicians to learn, recall, rehearse and retain methods taught.

In addition to this, we place a strong emphasis on ‘Maths Talk’ and the power of mathematical questioning which enables pupils to explore topics as a class and verbally develop reasoning skills during lessons. Every class has a ‘Maths Talk’ wall with mathematical sentence stems to support children’s reasoning and problem-solving skills.

Where possible, teachers and pupils mark work during the lesson so that pupils receive instant feedback about their learning. Teachers adapt future planning in response to their formative assessments. Amendments are made to lessons and targeted support is given to specific children to close gaps in their learning. Additional challenges and consolidation lessons are planned for where necessary. Teachers use a variety of additional resources to support them with this, including the NCETM’s Ready to Progress Materials.

EYFS

In Reception, children also follow the Power Maths scheme of work. Their Maths skills are further developed through planned and child-initiated play and activities: communicating and modelling language, showing, explaining, demonstrating, exploring ideas, encouraging, questioning, recalling, providing a narrative for what they are doing, facilitating and setting challenges. Planning is in line with the NCETM materials with a focus on developing a deep understanding of number through subitising and number recognition activities. This enables the children to gain strong foundational knowledge ready to progress to Key Stage 1.

Retrieval activities

At the start of each Maths lesson, classes reactivate prior learning through a short retrieval activity called a ‘Flashback’. This activity gives pupils the opportunity to recall previous learning from their short and long-term memory and ensures all learning is fully embedded. Children will ‘Know more and remember more’ with questions linked to the last lesson, last week and last term.

Fluency Time

In addition to Power Maths, every year group has a daily, twenty-minute fluency session which consists of:

- Years 2 – 6 teach times tables using the Mount Charles Times Table Planner document and the strategies outlined in our five day teaching timetable.
- EYFS and Key Stage 1 follow the NCTEM Mastering Number programme. This is daily systematic number fact teaching. It aims to secure good number sense in all pupils by focusing on fluency in calculation and a confidence and flexibility with number.
- Pupils access Times Table Rock Stars in KS2 and Numbots in KS1 to aid with rapid recall of multiplication and division facts and key number facts. This resource is used in school and at home.
- Key Stage 2 follow Fluent in Five which provides daily arithmetic questions to build fluency and confidence.

Substantive Knowledge

Children are explicitly taught key number facts and mathematical concepts so that they are fluent. They have time to explore relationships between number facts. Over time, children are able to instantly recall and retrieve mathematical concepts taught. Children can demonstrate this knowledge by verbalising methods used. This knowledge is taught and re-visited through daily Times Tables, Mastering Number, Power Maths, Mathematical Sentence Stems, Flashback retrieval activities and Fluent in Five.

Disciplinary Knowledge

When secure with the above, children will apply their Substantive Knowledge through reasoning and problem solving activities. The children have opportunities to do this through Power Maths and additional greater depth challenges planned by the teacher.

Mathematical Sentence Starters are taught and displayed in all classrooms to support the development of these skills and help children ‘talk like mathematicians.’

Impact

Monitoring has shown:

- Pupils enjoy maths and are confident mathematicians across a range of concepts.
- Pupils demonstrate independence in lessons
- Pupils use a range of strategies to efficiently calculate mentally.
- Pupils have a secure understanding of written methods and can apply them appropriately.
- Pupils have the chance to develop the ability to recognise relationships and make connections in maths lessons.
- Pupils talk passionately and with confidence about their learning in maths.
- Pupils are able to access maths across the curriculum in their next stage of education.

- When confronted with challenging or unfamiliar tasks, children exhibit persistence and confidence.
- Teachers plan lessons which meet the needs of all learners including those with SEND and disadvantaged.
- Teachers are secure in their subject knowledge.

Impact of mathematics at Mount Charles School is carefully tracked and measured by:

- Termly summative assessments (Year 1-6);
- Analysis of the summative assessments to develop future action points and priorities
- Termly pupil progress meetings
- Monitoring of pupils' maths books
- Monitoring of maths planning
- Weekly learning walks/drop ins – successes and points for development shared with teachers
- Fortnightly coaching sessions
- Number Stacks and IDL provision reviews on Edukey
- Pupil conferencing linked to maths.

2. Assessment

Formative assessment

Continuous assessment for learning is at the heart of our mathematics teaching approach and, as such, teachers are continuously assessing what their pupils can do - tailoring the next steps in the sequence of learning accordingly at cohort, class, group and individual level. The 'planning considerations' toolkit outlined in the Mount Charles Teaching and Learning policy are used to aid teachers in both their planning before the lesson and during 'in the moment' changes that may need to be made to maximise progress.

Summative assessment

Maths is assessed termly using PUMA (standardised assessment papers), allowing teachers to confidently assess each of the content domains and generate diagnostics about strengths and weaknesses to inform teacher planning.

3. Equal Opportunities

At Mount Charles we are committed to promoting equal opportunities irrespective of socio-economic background, gender, disability and ethnicity in all areas of the curriculum. We believe all children should have access to and participation in the learning of mathematics and be supported in this process.

4. Inclusion/Responding to individual needs

Children move through a lesson's learning at their own pace. They will acquire the skill, apply the skill or deepen the skill within the lesson.

Children who have shown their understanding at a deep level will be provided with the opportunity to deepen their understanding further, applying their skills through a challenging greater depth activity.

Children with additional needs are included in whole class lessons and teachers provide scaffolding, bridging tasks and additional support as necessary. For those children who are working outside of the year group curriculum, adapted independent learning activities are provided. The IDL Maths programme and the Number Stacks programme are used as interventions for some children working below expectations. Pupils whose difficulties are severe or complex may need to be supported with an individualised programme from an appropriate starting point.

Teachers identify children at risk of falling behind and set targets and activities for these children to close gaps in their learning. Assessment information is updated daily and curriculum plans are adapted where necessary as result.

5. Role of the Subject Leader

The leadership of the mathematics curriculum is the responsibility of the subject leader who:

- ensures the school has an effective mathematics curriculum for staff to follow. They ensure staff new to the school, including ECTs, understand the mathematics curriculum and how to deliver it effectively;
- supports colleagues in their teaching by keeping them informed of current developments in mathematics;
- directs staff to additional materials which can be used to deepen children's understanding further, respond to misconceptions or plug gaps
- writes a subject action plan, informed by the whole school improvement plan;
- carries out triangulated monitoring to identify strengths across the school, CPD priorities and inform action planning;
- delivers and/or sources appropriate training for staff;
- tracks progress across the school with particular emphasis on identified target pupils;
- ensures mathematics resources required to deliver effective class teaching and intervention are available, looked after and updated/replaced as necessary.

Policy Agreed:

Autumn 2023

Policy Review Date: Autumn 2024