

**Integrated Therapeutic Curriculum**  
Deep Dive

Maths

# Intent

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Mathematics is a tool for everyday life. It is a whole network of concepts and relationships, which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas, and to tackle a range of practical tasks and real-life problems. It also provides the materials and means for creating new imaginative worlds to explore.

We acknowledge that the primary National Curriculum (NC) mathematics programme of study, based on age expected standards, is comprehensive in scope. However, as a specialist setting, we recognise that for our pupils, the volume of content contained in the NC is a fundamental barrier to achievement and positive pupil engagement. Accordingly, our curriculum is designed on 'stage, not age' principles, promoting progress for each individual pupil from their own starting point.

In designing our maths curriculum, we have drawn on the highly respected work of White Rose, The Autism Education Trust (AET) and the National Centre for Excellence in the Teaching of Mathematics (NCETM), as well as using the DfE's Ready to Progress document. We have combined existing research and best practice with our own extensive knowledge and understanding of how our pupils best engage, learn and demonstrate progress over time.

Through our bespoke maths curriculum, we aim to support pupils to:

- Develop a positive perception of maths
- Identify and celebrate their own mathematical strengths and successes
- Deepen resilience
- Promote problem solving in real life applications
- Develop secure knowledge and confidence in the use of number
- Recognise the importance and practical use of key numeracy skills
- Use functional mathematics skills to broaden their life experiences
- Gain increasing independence by using maths to access the community
- Know when technology can be used to aid independence

# Implementation

In designing our own bespoke maths curriculum, we considered the evidence base for what leads to best outcomes for pupils. Ofsted's (2021) research review of mathematics education identified the following important features, which we deem particularly relevant for SEN settings:

- Successful curriculum progression is planned from the beginning of a pupil's education through focusing on core content, to develop pupils' motivation and to allow more breadth and depth later.
- Successful curriculum approaches tend to emphasise core knowledge early on.
- Teachers need to balance introducing new content with pupils' need to spend time revisiting content.
- Pupils should not be rushed through content. There should be space within the curriculum for planned consolidation.

We agree with Ofsted that high quality maths education take place when, 'Teachers remember that it is not possible for pupils to develop proficiency by emulating expertise, but by emulating the journey to expertise'. For all our pupils, we recognise that it is progress along their own mathematical journey that is the measure of success.

Our maths curriculum strand is split into key areas, each with its own curriculum framework and resources:

**Early mathematics** – drawing on the EYFS (DfE 2023), Development Matters (DfE 2023) and White Rose, this strand focuses on the initial exposure to mathematical ideas, including numbers 0-10, patterns, ordinal and cardinal understanding, and subitisation. A key focus is on the language of time (e.g. first, next, yesterday etc.), as well as introducing shape, basic measures and comparisons.

**Number and place value** – progression from recognising number with concrete objects in the real world, to developing pictorial and abstract representations. Our number strand is sequential, building on prior knowledge of numbers to 10 and progressing to 10, then 20, 50, 100 and beyond. Pupils are introduced to decimals and negative numbers how these are useful in everyday contexts e.g. money and temperature. In line with NCTEM advice (2022), significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning.

**Calculations** – following the progression of White Rose and the concrete, pictorial and abstract (CPA) approaches identified in our Mathematics Manipulatives Policy, pupils acquire skills and understanding that promote fluency and relational understanding in calculation. Pupils progress through these skills at their own pace, from their own starting point.

**Functional maths** – incorporating time, fractions, money, measures, and shape, space and data. Pupils access this strand through cross-curricular learning and targeted, contextualized life skills work. For instance, a visit to a local shop to buy ingredients for a cooking activity may cover time, measures, fractions, and money objectives in one activity.

# Impact

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Teachers, therapists, and senior leaders directly monitor and evaluate the impact of our curriculum and pupils' mathematical progress throughout the academic year via our curriculum tool, SOLAR. Our maths curriculum strand is intentionally designed to meet pupils' cognition and learning outcomes on their EHCPs and Individual Therapeutic Education Plans (ITEPs). Staff undertake regular CPD to ensure their practice is in line with key developments. Whilst being an independent special setting, we are fortunate to have a range of teaching expertise in the school, from experience of supporting early mathematics in the EYFS through to supporting mainstream Year 6 pupils to achieve 'greater depth' in their SATs. This breadth of knowledge and expertise ensures that all pupils attending Mountfield are set the appropriate level of challenge and are stretched to reach their best possible outcomes.

Pupils can increase their levels of independence through improved mathematical knowledge gained at our school. For our autistic pupils or those with high levels of anxiety, knowledge of telling the time and being able to identify periods of time can aid independent emotional regulation. Knowledge of how to use time and accurate measures is not only useful in a vocational context long term, but promotes immediate progress in independence in healthy living through food preparation, safely administering medication, and accessing leisure facilities.

Resulting from their SEMH needs, many of our pupils have typically experienced frustration and perceived failure when tasked with problem solving activities. We recognise that problem solving is not a solely mathematical skill, and is built on an interconnected set of cognitive and speech and language processes. By creating time and space in our curriculum to develop these areas of need, pupils develop greater resilience towards, and tolerance for, problem solving in mathematical contexts. Additionally, by teaching mathematical concepts in a functional way, linked to real life applications, pupils are motivated and engaged; this improves pupils' perseverance.

Where appropriate, external agencies can be used to identify specific numeracy learning difficulties, such as dyscalculia and dyslexia. We have experience of how this knowledge can aid pupils in recognising their specific learning needs and challenges, boosting their confidence that with right strategies, they can achieve success. As well as an extension of skills, pupils leave Mountfield with greatly improved levels of numeracy and mathematical confidence, from which they can further deepen their knowledge and understanding during the next stage of their education.

# References

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