

Maths at Meath Green Junior School- Implementation

Our aims:

Using the national curriculum's guidance, it is our aim to develop the pupils' ability to:

- Become fluent in the fundamentals of mathematics and have the ability to recall and apply knowledge rapidly and accurately.
- Solve problems and challenges by breaking down problems into a series of simpler steps and persevering whilst seeking solutions.
- Reason mathematically, developing an argument, justification or proof using mathematical language.
- With these as our focus, children will have the confidence and skills to execute calculations, be resilient and logical in problem solving, showing an understanding of language and using this to be able to explain their actions and understanding.

Teaching and Learning:

Maths is taught within sets which are determined by the cohort of children. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace.

Throughout lessons you may see a range of different strategies to support learning. These include;

- Activation of prior learning
- Questioning
- Modelling
- Patterns, links and connections between areas
- The practise of skills in different contexts
- The opportunity to explore language
- The exposure to reasoning strategies
- The opportunity to apply learning in problem solving situations through varied methods.

To support fluency in maths, all year groups incorporate an arithmetic task into their daily lessons, exposing children to a range of written and mental calculations. It helps to develop "number sense" and allows children to see patterns and connections between different operations and concepts. The element of repetition helps to support retention in learning, which in turn provides all learners with the confidence to achieve. It also increases children's abilities to recall and apply knowledge rapidly and accurately. The teacher can also use this time to address any misconceptions from prior learning and model appropriate methods if necessary. Children are encouraged to consider what they know about an answer to help eliminate mistakes when possible. Each year group will also focus on times tables where children not only complete a weekly times table grid but they will practise and review skills through activities and games.

To develop more competent mathematicians, years 3, 4 and 5 have a dedicated day in their weekly timetable to focus on reasoning. They explore a range of questions and problems, look at sentence stems and apply problem solving strategies.

The year 6 curriculum has reasoning woven throughout each topic area.

Our children use tests, whether that is weekly arithmetic or times tables as an opportunity to prove themselves. It gives them ownership of their learning and helps to build health competition. We like to reward personal achievements through certificates, team points and prizes.

Our books show what children have learnt and can do independently throughout each topic.

Throughout the entire curriculum, there are multiple opportunities to extend and promote Maths. Pupils are encouraged to explore the link between Maths, all other subjects and the world around them, by regular cross-curricular problem-solving opportunities. More specifically, the cross-curricular nature of Maths is explored in Science, Computing, DT and Geography, where opportunities arise.

SEN and Adaptive Teaching:

At Meath Green, we ensure the majority of children have access to the maths curriculum. The majority work towards the same outcome, we simply adapt our teaching approaches to help enable this. This might be seen in a variety of ways:

- Pre or post teaching
- Concrete resources or manipulatives
- Pictorial drawings or images
- Procedural, shared methods
- Supported steps in learning
- Guided group work

Children that we have identified as high risk (highlighted through our SEND indicator checklists) have a specialised support group. Often these groups include children with identified or undiagnosed SEND needs or those who are displaying warning signs or indicators of SEND. Through diagnostics, we will identify where their maths journey begins and our plans and teaching will then reflect this. These groups are necessary because for some they may still be unable to access the NC objectives for their year group. However, adaptive teaching is still being used within their setting.

Planning:

Teachers at Meath Green Junior School utilise the national curriculum objectives to carefully plan their lessons and activities, ensuring they cover key topics, such as number geometry, measurement and statistics. They use a variety of interactive and engaging teaching methods that promote procedural skills, problem solving and logical reasoning. Not only do they focus on extending knowledge, they will also plan to revisit key learning from earlier objectives.

Throughout our school, we use White Rose Maths to help sequence our curriculum and structure each topic area into manageable steps. The guidance from White Rose Maths ensures we have a clear focus for each lesson that is progressive through a series of lesson. Our teachers know which objectives must be taught and assessed in year groups and follow these progressive small steps ensuring their pupils have a comprehensive understanding. Our teachers use their discretion and only select the most necessary steps to support our learners. They will make professional judgment about when to progress children forward on to the next step based on the security of the pupils' understanding. Pupils who grasp concepts rapidly should be encouraged to apply their mathematical knowledge and skills in a variety of ways; being challenged through problems as well as coaching others, before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Our staff will use key learning questions and additional, alternative resources as this allows for a breadth of contexts which give more variety and greater exposure.

Assessment:

Assessment for Learning is used on a daily basis in all classes. During lesson inputs, teachers will use AFL to identify children who need support from smaller step teaching in order to master the learning.

Any misconceptions of learning from the previous day are caught quickly and addressed the following morning, either during the arithmetic starter or the input. Staff may also include these challenging areas into their arithmetic starters to ensure learning is revisited and secured. Individuals can also work with an adult during soft starts in the morning to review and practise concepts further.

Teachers will evaluate lessons on a daily basis. This information will then inform subsequent planning. Individual teachers are expected to identify how well individuals are working and the progress they are making within each unit.

After a unit of learning, children complete an end of unit assessment to confirm their understanding. These assessments are then used to inform planning further, or to recap certain areas that have not transferred to the children's long-term memory.

PiXL summative assessments are used to evaluate pupils learning every term. PiXL allows us to compare the attainment of our children with a large number of other schools.

After these summative assessments, teachers record pupils' attainment on PiXL. They will complete QLA's which allow our staff to analyse areas in greater detail, identifying strengths and areas for refinement. This data is also analysed by members of the assessment lead, maths lead and head teachers. "Data days" are then held to discuss and track progress, set targets, decide on next steps and inform planning.

Year 6 children are formally assessed using the national SAT examinations. Year 4 are formally assessed on their times tables knowledge using the national Multiplication Tables Check (MTC).

Working with the Assessment Lead to analyse of the PiXL data, MTC and SAT results, informs the Maths Leader and SLT of areas to consider for whole school development.

Additional Provision

Maths Mentoring:

Maths mentoring is a voluntary lunchtime initiative in Year 6, in which children are paired together to bring about mutually increased understanding. A mentee is paired with a mentor who is currently achieving higher scores initially on the arithmetic paper. Some pairs do move on to work on reasoning as the year progresses. Each week a mentor will work through some of the questions where mistakes have been made on the latest arithmetic paper correcting the mistakes and setting similar questions to check understanding. Mentees are encouraged as they see their scores improve and some go on to be mentors themselves. The understanding of mentors also improves as they try to articulate their thinking and explain different methods that could be used and why one may be preferable to another. In trying to address another child's misconceptions, a mentor's understanding is deepened. Mentoring improves results and is a win-win situation for all concerned.

Toast and Tips:

Year 6 also receive extra provision in the lead up to SATs. They have voluntary additional sessions in the morning, focusing on key areas, that they may have found challenging in the weeks leading up, whilst enjoying a hearty breakfast.

Resources:

Teachers at Meath Green strive to create an enriching and diverse learning environment by incorporating concrete, pictorial, and abstract resources in maths lessons. Concrete resources, such as manipulatives like counters or numicon allow students to physically interact with mathematical concepts. Through hands-on exploration, children can grasp the fundamental principles and build a solid foundation of understanding. Pictorial resources take learning one step further by using visual aids such as diagrams or drawings. These representations help students make connections between real-life situations and mathematical concepts, promoting spatial awareness and problem-solving skills. Finally, abstract resources, such as number lines or mental calculations, bridge the gap between the concrete and the pictorial. By encouraging students to think critically and apply previously acquired knowledge, abstract resources foster independent and higher-order thinking, enabling students to tackle complex mathematical challenges confidently. In order to build independence, the teacher will model how to use key resources to support their learning and children can freely access these when they need. Individual learners may also have access to maths packs which include resources selected by the teachers. Before students join Meath Green, they are also given a times table pack to support their learning.

Monitoring:

The subject is monitored in a variety of ways to ensure high standards in both teaching and learning.

- Planned book looks with a focus determined by, subject leader, SIP, year group or whole-school needs.
- Regular Learning Walks
- Pupil voice to discuss their learning.
- Regular feedback from the above monitoring to the whole staff.