The Meadows School

Cognition and Learning: Maths

Introduction

The Meadows School is deeply committed to achieving the best possible outcomes for all its students. We provide a broad and balanced curriculum designed to meet the unique needs of each learner. To ensure this, we implement a multi-tiered curriculum model, tailoring both content and teaching strategies to the specific needs of our pupils. This approach is structured around four key pedagogical pathways; these pathways include the Pre-formal Pathway (Engagement for Life), the Informal Pathway (Foundations for Life), the Semi-formal Pathway (Learning for Life), and the Formal Pathway (Options for Life).

Each curriculum pathway is carefully designed to align with the developmental needs of the learners, ensuring they build a strong foundation of knowledge and skills. This prepares them for progression into the next pathway or equips them for life beyond school, including successful transitions into adulthood.

Our **Maths** curriculum is intentionally sequenced and planned to ensure that prior knowledge is built upon, and students are prepared for their next steps. **It is strongly connected to the Preparation for Adulthood (PfA) outcomes, supporting key areas such as Employment and Independent Living.**

Adopting a mastery approach to teaching Maths, we believe that every pupil can learn and enjoy the subject. We focus on developing **mathematical** learning behaviours that are responsive to each student's individual motivators and needs, allowing them to engage deeply with the content. By fostering a strong understanding of core concepts, we ensure that students are well-equipped for future learning and development.

At the Meadows School we offer a high-quality Mathematics curriculum providing the foundational skills to enable student to use and apply mathematical knowledge to everyday situations. Students will participate in a fun and safe environment to help build up a body of key knowledge and concepts and are encouraged to see how this can be used and applied to what they experience in everyday life.

We aim to ensure that our students are:

- Able to use and apply mathematical skills to real world situations.
- Able to share their mathematical understanding through class discussions.
- Able to problem solve by applying mathematical knowledge.
- Able to have a degree of number sense allowing for independence in the wider community.
- Developing conceptual understanding and are able to recall and apply knowledge in different contexts.

Pathway Model (Intent, Implementation, Impact)

Engagement for Life (Pre-Formal; PMLD)	**Foundations for Life (Informal; Complex ASC/CLDD)**	**Learning for Life (Semi-Formal; SLD)**	**Options for Life (Formal; MLD)**
This pathway typically consists of PMLD learners who need and respond to a sensory based curriculum that supports their holistic care and physical wellbeing needs.	This pathway typically consists of our ASC learners who may have complex needs alongside varying communication needs. These students often need support to manage their emotions and process information	This pathway typically consists of learners who have SLD who are learning to communicate through the most appropriate means to them, building independence and confidence to generalise skills in different social contexts.	This pathway typically consists of learners who have MLD who are learning to build on existing skills and develop greater independence and confidence within different social contexts and environmental settings.
Intent			
Cognition and Learning Intent ❖ The Pre-Formal Pathway curriculum for Cognition and Learning recognizes that learners with Profound and Multiple Learning Difficulties (PMLD) have distinct ways of learning, and that their learning journey is unlikely to follow a linear path due to their individual needs and strengths.	**Early Mathematics Skills Intent** ❖ The intent of the early maths skills curriculum for Complex ASC learners is to provide a foundation for understanding key mathematical concepts, using structured, sensory-rich, and individualized approaches that cater to their specific needs and learning styles. This curriculum aims to engage students	**Mathematics Intent** ❖ Explore and apply a range of mathematical concepts through a variety of situations linked to real life skills. ❖ To enjoy exploring maths through play opportunities. ❖ Develop mathematical resilience, curiosity and enjoyment.	**Mathematics Intent** ❖ Explore and apply a range of mathematical concepts through a variety of situations linked to real life skills. ❖ Develop mathematical resilience. ❖ To be able to solve problems in real life by using and applying their mathematical knowledge.

Learners following the Pre-Formal Pathway curriculum for Cognition and Learning: ❖ Receive immediate and consistent feedback on their responses. ❖ Are provided with opportunities to interact and respond to the actions of others. ❖ Learn holistically through a curriculum that is interconnected. ❖ Engage in a responsive and immersive environment that fosters social, communicative, and cognitive skills. ❖ Access personalized learning through specialized teaching approaches. ❖ Experience a curriculum adapted to reflect their interests and motivations, ensuring engagement. ❖ Require varying levels of sensory stimulation.	through exploration, sensory experiences, and practical activities that foster curiosity, independence, and basic mathematical understanding in a supportive and predictable environment. ❖ To nurture a sense of curiosity and promote independent thinking through the exploration of early mathematical concepts. ❖ To support the development of problem-solving skills by using their knowledge and understanding of basic mathematical problems applied to everyday real-life scenarios. ❖ To connect Mathematical learning with real-world situations, helping learners see the relevance of early mathematics concepts in their daily lives and	❖ Provide a broad and balanced curriculum to develop pupils into mathematical thinkers. ❖ Provide opportunities to solve problems by applying mathematical knowledge.	❖ Maths's skills are reinforced and revisited through a variety of contexts to ensure key mathematical concepts are embedded. ❖ An ability to work systematically and accurately with opportunities for working as part of a team and individually to ensure greater understanding. ❖ Opportunities to explain or demonstrate their understanding using appropriate language and /or written work.

	develop functional knowledge. ❖ Students will participate in a fun and safe environment to help build up a body of key knowledge and concepts and are encouraged to see how this can be used and applied in everyday life.		
Implementation			
Pupils are supported in engaging with activities and experiences by ❖ Providing sensory-rich experiences to stimulate sight, sound, touch, taste, and smell, allowing learners to connect with the environment through their senses. ❖ Using tactile materials, sounds, lights, and movement to encourage sensory engagement with	Pupils are supported in engaging with activities and experiences by ❖ Planning and delivering sensory-based mathematical activities that appeal to a range of senses, including touch, sight, sound, and smell (e.g., exploring materials such as water, clay, or sand). ❖ Providing tactile, auditory, and visual stimuli to engage	**<u>Key stages 3 and 4</u>** ❖ Giving students a range of play and exploration opportunities. ❖ Providing opportunities to use and apply their mathematical skills in a variety of real-life situations. ❖ Taking part in whole school enterprise events. ❖ Providing access to technology to promote	**<u>Key stage 3 and 4</u>** ❖ Providing a range of teacher and student led activities. ❖ Having investigative and problem-solving activities through enterprise events. ❖ Providing opportunities for mathematical discussion and work beyond the classroom either around the school or on educational visits.

natural and physical phenomena (e.g., water, textures, light, or temperature). ❖ Introducing basic science concepts such as hot/cold, light/dark, wet/dry, and fast/slow through sensory experiences and hands-on exploration. ❖ Providing multiple communication methods for learners to express their observations and responses (e.g., eye gaze, gestures, switches, or communication boards). ❖ Introducing simple cause-and-effect activities, such as pressing a button to activate a sound or light, to help learners understand how actions can lead to changes in their environment. ❖ Encouraging learners to explore and	students and stimulate their curiosity (e.g., using brightly coloured objects, textured materials, and sounds to introduce basic mathematical concepts). ❖ Using sensory play (e.g., water play, nature walks, and light exploration) to help learners understand basic mathematical concepts such as properties of materials (e.g., floating and sinking, hot/cold). ❖ Offering simple, hands-on Mathematical activities that encourage exploration and exposure to concepts associated with: • Number Place Value • Geometry • Measurement ❖ Providing opportunities for students to count real-life objects in	mathematical engagement. ❖ Having opportunities for mathematical discussions where students can share their understanding and reasoning individually, and through whole class and small group discussions. ❖ Ensuring there are a mixture of teacher led and student led activities. ❖ Providing a range of resources (including Numicon) to give access to all **<u>Key stage 5</u>** ❖ In Key Stage 5 maths is delivered cross curricular through a range of functional real-life activities designed to build on functional mathematical skills acquired in key stages 3 and 4. By completing the assigned	❖ Having opportunities to share their mathematical understanding in small group and whole class discussions. ❖ Challenging students to think and avoiding questions with simple answers. ❖ Using a variety of sources of information including the use of "real life" materials and situations. ❖ Using a variety of technology and mathematical instruments, equipment. ❖ Providing a range of resources (including Numicon) to give access to all **<u>Key stage 5</u>** ❖ In Key Stage 5 maths is delivered cross curricular through a range of functional real-life activities

understand the relationship between their actions and the outcomes. ❖ Using appropriate resources (e.g., visual aids, tactile objects, specialized equipment) to support participation and engagement in activities. ❖ Using calming, structured sensory experiences to support emotional regulation and create a predictable, safe learning environment.	functional real-life situations (e.g. Cooking) ❖ Fostering joint attention by focusing on shared sensory experiences, prompting and supporting interaction during hands-on tasks.	accredited units' students will consolidate and apply skills from these areas of maths: • Number place value • Measurement • Number operations • This will support students to pursue opportunities beyond The Meadows School.	designed to build on functional mathematical skills acquired in key stages 3 and 4. By completing the assigned accredited units' students will consolidate and apply skills from these areas of maths: • Number place value • Measurement • Number operations This will support students to pursue opportunities beyond The Meadows School.
Impact			
❖ Our students will engage in sensory-based activities that help them become more aware of their environment through sight, sound, touch, smell, and movement. ❖ Curriculum experiences, such as exploring textures,	❖ Our students will become more aware of basic mathematical concepts and begin to use these functionally to comment or request sensory stimuli. ❖ Providing opportunities for learners to engage independently with mathematical activities	❖ Enthusiastic and demonstrate mathematical enjoyment and confidence. ❖ Engaged in mathematical activities. ❖ Able to independently apply mathematical	The impact of the Formal Pathway provision is demonstrated through the development of students who are: ❖ Confident in sharing their mathematical understanding. ❖ Demonstrating high levels of engagement

liquids, and light, allow learners to make connections between sensory stimuli and objects. ❖ Learners begin to recognize and respond to different sensory stimuli, which helps them better understand the world around them. ❖ Sensory-rich science activities help regulate emotions by offering calming experiences and a sense of routine. Exploring sensory materials like water, sand, or soft fabrics can soothe and comfort learners, improving emotional regulation. ❖ The predictable structure of sessions provides PMLD learners with a sense of routine and security. Having a consistent approach to learning, where activities are repeated and adapted to the	helping build their confidence and self-esteem. As they begin to use and apply concepts to everyday life ❖ Early exposure to early concepts lays the groundwork for later learning in other curriculum areas. The skills developed in early mathematics, such as counting, knowledge of shape and sizes are transferable to other subjects including early science and creative subjects such as art and design. Further outcomes include ❖ Successful learners, who enjoy learning, make progress, and achieve. ❖ Positive individuals who grow in confidence, perseverance, and independence.	knowledge to a variety of problems. ❖ Able to use mathematical skills to support them in daily life.	in mathematical activities. ❖ Comfortable and at ease with maths and able to explore mathematical ideas. ❖ Not afraid to make mistakes. ❖ Actively participants in problem solving. ❖ Able to use and apply their mathematical skills in a variety of real-life situations.

learner's needs, helps reduce anxiety and fosters a sense of safety. ❖ By focusing on sensory engagement, communication, and cause-and-effect exploration, the curriculum supports cognitive, emotional, social, and physical development. PMLD learners gain valuable skills in self-expression, problem-solving, and social interaction through hands-on, sensory-rich experiences.	❖ Happy students who are secure, healthy, and safe.		