



"Where children are at the heart of every decision to inspire brighter futures"

Respect, Responsibility, Recognition and Resilience

Mathematics Curriculum Delivery Document

Intent	<p>At Girnhill, Mathematics is taught through the ambitious National Curriculum and the Early Years Foundation Stage Framework, enhanced and supplemented with the use of Maths Hub documents to support staff to plan small progressive steps in a specific coherent teaching sequence. At Girnhill Infant School we expose our pupils to a breadth of challenges, inspire learners to develop a love of mathematics and encourage them to appreciate the beauty and possibility of number! Through the use of carefully selected resources we intend to scaffold and challenge our learners to enable them to develop their confidence and efficient strategies in order to make a positive contribution to the wider world. We are ambitious in our expectations of all pupils, ensuring cross curricular links are made to develop children holistically. We map the National Curriculum and Early Years Foundation Stage Framework for mathematics into a coherent and sequential progression model that outlines the substantive knowledge, disciplinary knowledge, vocabulary and sentence stems needed at each stage that will build cumulatively towards learners being able to use and apply their knowledge, skills and understanding across a range of mathematical concepts, making purposeful links. At Girnhill Infant School, oracy is a powerful tool for learning; by teaching children to become more effective speakers and listeners we empower them to better understand themselves, each other and the world around them. Vocabulary is purposeful and progressive to allow children to develop their oracy and leave school being able to articulate their understanding of maths using the four strands of good talk. Technical tiered vocabulary is modelled through flashcards and teacher talk. Number talk sessions enable children to develop numerical oracy in concepts such as perceptual subitising and cardinality, part-whole awareness and conceptual subitising. This will enable children to build images of numbers and visualise number facts, as well as supporting language development. Sentence stems are used to provide children with a model of how to speak like a mathematician and scaffold their talk effectively. Questions are planned in advance to target pre-empted misconceptions and enable children to develop their explanations and methodology. Hinge questions are used as a method of formative assessment in order to check children's understanding and address misconceptions. This is linked to the progression grid so that over time children know more and remember more.</p>
Implementation	<p>We ensure that all teachers, including those who are non-specialists, have excellent subject knowledge and are supported in the implementation of the curriculum by the experienced Mathematics Leader. Oracy is woven throughout mathematics. The progression grid details the oracy expectations of each year group within the four strands of good talk. It also includes the tiered technical vocabulary all learners need to acquire and use in order to talk like a mathematician. This will be modelled</p>



	<p>using flash cards, teacher talk using 'my turn your turn' and opportunities are made for children to practice using the vocabulary throughout lessons. Suggested sentence stems are provided and used in order to scaffold responses. Opportunities for children to practise the skill of presentational talk will be further developed in mathematics through the use of mode B learning such as collaborative learning and presenting findings to one another.</p> <p>Through using Rosenshine's Principles, learners have the opportunity to revisit and build on prior knowledge. Daily review is used at the beginning of every session in order to activate prior learning to attach new learning to. High-quality modelling of skills and language is offered to our children and scaffolds are provided for difficult tasks. Visual success criteria is provided for learners every lesson and learners are encouraged to use the CPA approach. Learners are given the opportunity to practise and apply their new acquired knowledge, skills and understanding through a wide range of varied fluency, reasoning and problem-solving opportunities during daily maths lessons. Questions are progressively planned for using conceptual and procedural variation in order to target pre-empted misconceptions and enable children to develop their explanations and methodology. Hinge questions are used as a method of formative assessment in order to check children's understanding and address misconceptions. Classroom working walls demonstrate prior learning, promote the vocabulary specific to current learning, worked modelled examples, success criteria, concrete, pictorial and abstract methodology and visual sentence stems.</p>
Impact	<p>When they leave each phase, most learners have the knowledge, skills and vocabulary necessary to progress to the next stage of their learning. As a result of high-quality teaching, learners make sustained progress in mathematics and develop the competence to reason and problem solve confidently and efficiently enabling them to make a positive contribution to the wider world. Pupil voice will show that children can talk about their enjoyment and understanding of mathematics using key modelled vocabulary, measured against our age-based progression grids. Learners books will reflect the positive attitude and resilience in mathematics acting upon feedback.</p>



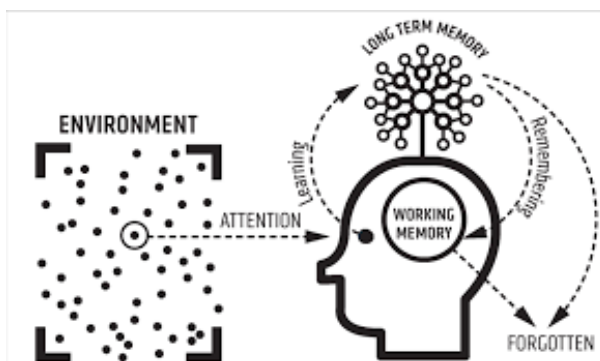
"Where children are at the heart of every decision to inspire brighter futures"

Respect, Responsibility, Recognition and Resilience

What do our lessons look like?			
Introduction	Teacher Input	Pupil Activity	Ongoing Assessment
Daily review	Introduce key vocabulary	Guided student practice	Questioning
	Present new materials using small steps	Independent practice	Check for understanding and address misconceptions
	Provide models	Use of scaffolds where needed	Reviews
	Provide scaffolds	Obtain high success rate	Daily, monthly, weekly reviews

How do we ensure that knowledge gained is transferred from the working memory into the long-term memory?

Rosenshine's principles in action (bridging research and classroom practice) is providing support and strategies to secure pedagogical understanding for staff.





"Where children are at the heart of every decision to inspire brighter futures"

Respect, Responsibility, Recognition and Resilience

Principles identified	What do we expect to see in our Mathematics lessons?
Daily Review	Daily review is used at the beginning of every maths lesson to activate previously taught skills, vocabulary and knowledge. Examples of this include: think, pair, share; call and response; flashcards of previously taught vocabulary; true or false; flashback 4; missing information
Questioning	A variety of key questions are individually planned by teachers prior to delivering the lessons. The questions progress through the units of work encouraging children to 'dive deeper' with their answers. Staff will also encourage 'say it again better' where applicable and use techniques such as cold calling, 'tell me how and why' and think, pair, share to ensure ALL children have opportunity to answer and subject specific language when responding orally. Hinge questions are used as a method of formative assessment allowing staff to check understanding and address misconceptions. Question stems are used to scaffold children's responses, these are both verbal and visual and are present for children to refer to throughout each lesson.
Sequence concepts and modelling	Modelling is provided by the teacher, support staff and peers. These models are high-quality and repeated many times with the children in different ways. Children are given time to practise the application of skills for as long as needed. Teachers model the subject specific vocabulary and sentence stems needed to answer questions and share ideas and opinions. Lesson plans are progressive, but broken down into small steps to support the acquisition of knowledge in to long term memory. Scaffolds are used to support all children in achieving the learning objective This might be in the form of adult support, displayed vocabulary and knowledge and sentence stems. Visual success criteria is provided for learners every lesson and this is dual coded with symbols to aid understanding for ALL learners.
Stages of practice	Close supervision during guided practice from the staff. Providing instant feedback to learners. Time for independent practice when the learners are ready to use and apply their skills, knowledge and understanding.