Math in a Nutshell

Intent: What do we want children to learn?

Mathematics is an important creative discipline that helps us to understand and change the world. We want all pupils at Grange Infants Primary School to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. At Grange Infants we foster positive can do attitudes and we promote the fact that 'We can all do maths!' We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems. At our school, the majority of children will be taught the content from their year group only. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.

We aim for all pupils to become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. To be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios. Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language. Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

Impact:

By the time children leave our school they will: By the end of KS1 we aim for children to be **fluent** in the fundamentals of mathematics with a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. They should have the skills to **solve problems** by applying their mathematics to a variety of situations with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios. Children will be able to **reason mathematically** by following a line of enquiry and develop and present a justification, argument or proof using mathematical language built into generalised sentence stems.

Our 5 Curriculum Drivers in Math:

Curiosity: In Mathematics the children will reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

Courage to Take Risks: Children will be encouraged to take risks to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. Children will understand that mistakes and misconceptions are an important part of learning and they will be provided with time to unpick and discuss their mistakes and learn from them.

Empathetic: To develop a culture of supporting our peers and understanding that children will solve calculations and problems in different ways. Children will be supportive towards each other in sharing their mathematical reasoning and thinking.

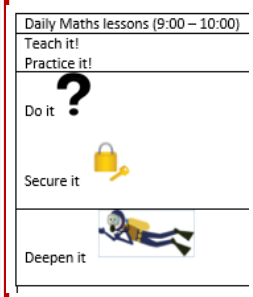
Promote the love of reading: Maths will be promoted through a variety of rich quality fiction and non-fiction texts that teach children to celebrate the diversity of maths in different cultures, for example Number day. Through Maths stories children will develop a love of maths and see that Maths is all around them in the wider world highlighting the importance of maths in everyday.

Imaginative: In Maths representations, structures and maipulatives will be used to support the children's learning. Children will be imaginative and creative in their use of manipulatives and representations to solve calculation and problems and explain their mathematical thinking. Children will use their creativity and imagination to discuss and create number stories.

Curriculum Implementation: How do we do it at Grange Infants School?

Our whole curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish to become the very best version of themselves they can possibly be. We teach the National Curriculum, supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.

Maths Lesson: Unit planning based on National Curriculum Statements, manageable steps (Can Do Maths and Reception TWHF planning). Children are taught Mathematics for approximately 1 hour daily (split between two sessions: Maths and MOT sessions). Support is determined during each lesson to ensure secure understanding based on the needs of the child. Challenge is visible throughout the whole session, where children are asked to reason and prove their understanding at a deeper secure level.



Lessons are designed so to ensure the following are covered: Teach it, practice it, Do it (3 standard, 2 non-standard), Secure it (Misconceptions, True/False, Spot the mistake, Explain why, Prove it), deepen it (always/sometimes/never, Here's the answer, empty box) and finally a lesson recap.

Re-cap on previous learning from Maths lessons or key learning areas such as number bonds, doubles, times tables, quick re-call division facts etc. Teachers are encouraged to use 'Maths on Track' sessions to immediately tackle misconceptions and consolidate learning if not understood in the morning teaching session.

Daily Maths on Track Meetings (8:40 – 9:00)
Practising, Consolidating, Intervening.
Skills Sessions – deliberate practice
Arithmetic/Intervention/Practise/Problem Solving