The Ranvilles Curriculum: Exploring the World…Exploring Me…

Subject Discipline: Mathematics

Intention

It is our intention is that every pupil will see themselves as a mathematician and foster a lifelong curiosity and enthusiasm for the subject. We aim to ensure that children discover the value of all aspects of mathematics in everyday life and understand that it is all around us. Whilst exploring the awe and wonder, developing key skills will be an essential element of our lessons, to enable Ranvilles' learners to leave us for secondary school, proficient and confident mathematicians. We value the importance of critical thinking and problem-solving skills too, in order to prepare the children for future success in a complex and ever-changing world. Whilst striving to develop our mathematicians to be accurate and fluent, it is our intention to promote the use of our Ranvilles' values during all mathematics lessons, facilitating time for learners to reason and reflect, as well as appreciate the importance of perseverance and creative thinking. By establishing a positive classroom ethos, it is our aim that pupils will develop a growth mind-set when faced with challenges, whilst seeing and appreciating mistake-making as part of the learning process. Through stimulating teaching and learning strategies and meaningful contexts, our objective is to ensure that the pupils are able to develop their confidence, whilst being motivated and challenged to achieve their very best.

Implementation

The mathematics curriculum is aspirational. It is biased and shaped to meet the individual, contextual and holistic needs of all pupils. Formative assessment is used constructively to secure ambitious objectives, supporting learners to maximise their abilities.

Maths Practise Prove Perfect (PPP)

Every maths lesson starts with PPP which is focused on mental maths skills. This time is planned carefully to meet the needs of the children and may practise skills which will be required by the children in the maths lesson or focus on essential skills to be mastered, such as times tables.

Maths Lessons

From the moment the children enter the school in year 3, they are encouraged to think of themselves as active problem-solvers. Each domain unit starts by revealing a 'Big Problem' which the children will solve at the end of the journey. This will help to bring the maths alive for our learners and help them to value the maths skills they are learning. Each classroom displays the learning journey, explores the steps within the journey and the key skills they will gain along the way. This explicit teaching and learning establishes confidence for children to apply relevant knowledge and skills to solve the problem.

Each unit of work is planned in three steps:

- Step 1 – Core skills practice
- Step 2 – Application of core skills in a range of contexts
- Step 3 – Solving the problem

Through each of the three steps, a concrete, pictorial and abstract (CPA) approach enables the children to use supportive resources and pictorial representations, including part-whole diagrams and bar models, to understand each abstract concept. Understanding vocabulary is key to success at a mathematician and this is modelled and emphasised by adults through lesson inputs and guided work. All children know what they are learning each lesson and why; this helps them to value the process and understand that each lesson is important to the overall journey.

Lessons are designed to have a good balance of teaching and learning of fluency, reasoning and problem-solving, with adults modelling key skills such as working efficiently, working systematically and explaining thinking through meta-cognition. Independent activities are designed with the practise, prove, perfect concept in mind and provide opportunities for children to assess their own understanding and choose a confidence starting point for their independent work, whilst being exposed to a range of fluency, reasoning and problem-solving tasks. Teachers use assessment for learning to tailor scaffolding and to design tasks to meet children's needs, ensuring that tasks provide enough challenge and encourage deeper thinking.

The 'big problem' at the end of the unit creates excitement and enthusiasm and helps the children to link maths in the classroom to everyday life. It is also an opportunity for adults to assess understanding and confidence in the skills taught within the unit and informs future planning.

Maths Application Time (MAT)

We value the importance of regular practise of skills, as well as the need for pupils to be able to apply different skills and prior learning independently. Therefore, every day for 15 minutes, learners complete MAT, an opportunity to recall and apply prior learning independently, revisit key skills and apply knowledge. In lower school, the focus is on *Connect Four*, where the children are presented with four questions connected by a concept but presented in four different ways. This helps them to understand that one concept can be represented in a variety of question types and encourage them to see the links between them. In upper school, the children complete *Flashback Four*, where they independently answer a question from last lesson, last week, last unit and last term. This concept supports independence, recall and the multi-domain approach and skills required to sit the end of key stage test.

Impact

Knowledge, built in the discipline of mathematics, is utilised both in the maths 'big problem' and in the Ranvilles SMSC 'Big Debate' at the end of a half term. The Big Debate connects key subject disciplines. Learners draw on the knowledge and skills explored in Maths to: **S**equence ideas, **T**hink critically, **A**rticulate precisely, **R**espond respectfully and **S**ynthesise collaboratively. This process enables learners to positively push new boundaries in exploring the world. Pupils will know how and why maths is used in the outside world and the ways in which it can be used to support their future potential. They also understand and appreciate the developmental knowledge and skills required to be a life-long mathematician. Summative assessment is used carefully to evaluate success and plan to meet future needs.

All pupils will make good progress in their maths journey through the school, whilst valuing the skills they are taught. The vast majority will meet or exceed their age-related expectations and will be able to use mathematical language to explain their thinking. They will be able to apply the wide variety of skills taught confidently in a number of contexts and will leave Ranvilles working with confidence and being proficient problem-solvers. Children are secure and confident, well prepared for the next step in their mathematical learning journey.