Mathematics at Rossmere Academy

Intent

MATHEMATICAL INTENT AT ROSSMERE ACADEMY

- At Rossmere, mathematics is an important part of the broad and balanced curriculum.
- Rossmere Academy uses the Mastery approach, to ensure that all children secure a long-term understanding of mathematics, which they can apply in different contexts. The curriculum will create confident, enthusiastic, creative and articulate mathematicians.
- Rossmere's mathematics curriculum is progressive.
- The use of the Small Steps Approach, ensures that all children can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- Using the Mastery approach, we place great emphasis on the use of concrete resources and pictorial representations at all ages and all abilities.
- At Rossmere, we intend for all pupils to become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time. This will enable pupils to develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- At Rossmere, our intention is for all pupils to reason mathematically, by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- At Rossmere, we intend all pupils to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing difficulty, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Children will develop into independent learners with inquisitive minds, who have secure mathematical foundations to allow them to be inspired by mathematics, ready for life beyond Rossmere.

Implementation

MATHEMATICAL IMPLEMENTATION AT ROSSMERE ACADEMY

- Rossmere Academy has fidelity to the White Rose Mathematics Schemes of Learning (based on the National Curriculum).
- The small-steps mastery approach to mathematics is used throughout school.
- Pupils are taught through whole-class interactive teaching and lessons are adapted to meet individual needs.
- Children from Reception – Year 6 complete learning episodes that include: rapid recall, activation of prior learning, fluency, reasoning and problem-solving. Although Maths is taught daily, we are conscious that learning episodes may continue for several days. This is to ensure the children have the opportunity to consolidate and secure their understanding before moving on to the next step of their learning journey.
- Sparkles and Nursery have a daily count and use number songs to embed learning as well as a maths-rich environment to ensure our children are exposed to key concepts in the earliest years.
- Throughout EYFS, learning opportunities are created for children to practice specific Maths skills and problem-solving through continuous provision and child-initiated learning.
- A daily arithmetic session is also completed, separate to their learning episode. This gives the children the opportunity to practice procedural methods as well as revisit previous learning. We call this 'Secure in Six.' Six questions, one for each of the four number operations, one based around shape, space or measure and a final one for other mathematical concepts such as fractions, rounding or a concept linked to the year's specific expectations. All questions are to recap prior knowledge.
- To support the children, we have a range of mathematical resources in classrooms including Numicon, Base10 and counters (concrete equipment). When children have grasped a concept using concrete equipment, images and diagrams are used (pictorial) prior to moving to abstract questions.
- Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to answer and solve maths without equipment or images. To enhance the Mathematics curriculum, a range of supplementary planning resource are used for example NCETM, NRICH, Maths No Problem, Master the Curriculum, Third Space Learning, I See Reasoning and Numberblocks.
- To develop children's fluency in mathematics we utilise Times Tables Rock Stars for multiplication practise, application and consolidation as well as Maths Shed and Hit the Button to increase speed of recall of number facts. Children are able to access these resources at home.
- Due to the embedding of STEM sentences, children will have the language to be able to justify, reason and explain their answers.
- Children can demonstrate a quick recall of facts and procedures, including the recollection of the times table. Due to the Mastery approach being taught across the school, all children secure long-term, deep and adaptable understanding of mathematics, which they can apply in different contexts.
- Using formative assessment, we continuously monitor pupils' progress against expected attainment for their age or level of development.
- At Rossmere Academy, children complete their year group PUMA every term. This is an assessment tool to measure if children are working below ARE, working at ARE or working at greater depth.

Impact

MATHEMATICAL IMPACT AT ROSSMERE ACADEMY

- By the end of KS2, children will have developed a bank of efficient and accurate skills that can be used to calculate effectively.
- These will have been underpinned by the concrete, pictorial, abstract (CPA) process so children understand rather than just do, which ultimately will allow children to identify when answers do not make mathematical sense.
- Children will be able to apply these calculation skills and understanding of other areas to become confident and resilient problem-solvers with the ability to reason and articulate their ideas mathematically.
- At the end of each year, we expect the children to have achieved at least Age-Related Expectations (ARE) for their year group.
- Children with SEND will be expected to reach their full potential and make progress, through the use of different teaching methods where necessary, staff knowing their children and through an inclusive ethos, as stated in the Rossmere SEND Policy.
- Governors will monitor the attainment and progress made in Mathematics through Governor Meetings with the Maths subject leader.