

Maths

Vision and Intent



Co-op Academy
Grange

Our Vision for Mathematics at Co-op Academy Grange

The vision of the Maths department at Co-op Academy Grange is for students to build confidence and to acquire and use mathematical skills that will stand them in good stead throughout their lifetime. We will combine this with an inclusive ethos and the acquisition of powerful knowledge that broadens students' experience and allows them to make significant progress. Wherever you look in the world there is Maths, and we aim to equip students with the knowledge and, more importantly, the skills, to fully participate in our information-driven society.

Our Intent for Maths at Co-op Academy Grange

Our Curriculum – What do we want our Maths curriculum to be?

At Co-op Academy Grange we have an ambitious curriculum that contains powerful knowledge, filled with opportunities for students to learn, reflect and apply their knowledge to the world around them.

Our curriculum is designed to ensure all of our students:

- Develop educational, cultural and social capital to understand and engage with the world around them.
- Have high aspirations and know how they can achieve them.
- Provide firm foundations and achieve success to enable them to move onto the next stage of their learning journey.
- Can succeed in mathematics, regardless of their background and abilities.

The Teaching For Mastery program has been written in line with the national curriculum and it is based upon the scheme from Mathematics Mastery. Building on from Key Stage 2, the curriculum has been designed to support our vision of every child achieving in Mathematics, regardless of background, ability and location. The curriculum has been developed to address the 5 big ideas set out by the National Centre of Excellence in Teaching Mathematics (NCETM) along with other educational research that will help students achieve the highest grades at GCSE and close the attainment gap between all areas within our school community.

The mastery curriculum is sequenced into half termly themes that link topics from the same areas of Mathematics helping students and teachers make connections. The curriculum is carefully considered and sequenced informed by expert subject knowledge. All students study the same topic at the same time to ensure that all students can achieve the highest of grades. The knowledge, skills and understanding from Key Stage 2 is successfully built on, ensuring there is a coherence and continuity across the key stages. There are skilful assessments that provide clear information to inform planning and secure strong progress. Importantly, the assessments check prior knowledge and understanding, so that further knowledge and understanding is built on secure foundations.

What does it look like in the classroom? (Implementation)

Expert subject and pedagogical knowledge that delivers:

- An exploration of gateway and future knowledge, real life links and links to other subjects, using methods of delivery that are rooted in the science behind the acquisition of knowledge and educational research, including 'teaching to the top' and first class guided and independent practice.
- Lessons which focus on using prior learning to help make connections with the new mathematics being taught
- The implementation of the 5 big ideas of Teaching for Mastery set out by the NCETM.
- A robust assessment for learning by checking for understanding through effective questioning, and quick checks and exit tickets, that is designed to anticipate errors and tackle misconceptions head on. Assessments are used to inform planning and secure strong progress.
- An extensive use of modelling in the classroom where staff use I, We and You.
- Reinforcement of knowledge that deepens understanding and promotes the transition from novice to expert learners, with plenty of opportunities for speaking and listening in lessons using specialist vocabulary.
- A coherent curriculum that includes sequenced lessons that are scaffolded, extended to provide progression in maths as well as supporting other subjects.

For example: In primary school students study multiples and factors, in year 7 the students study highest common factors and multiples along with axioms and arrays, within the year 8 curriculum the students study linear equations. All of these connections form the foundation of Quadratics studied in year 9. The students then expand upon this in Key Stage 4 where they study further Quadratics, Quadratic Sequences and solving algebraic fractions.

What will the impact be?

Our Mathematics curriculum is designed to ensure that all of our students have:

- High quality lessons that have clear end points focussed on the core knowledge required at each stage of the learning journey.
- Access to the whole curriculum that is skillfully sequenced to address gaps and secure strong progress.
- The opportunity to secure their best possible outcome so that all future pathways are open to them and they are ready and confident for the next stage of their life.
- Opportunities and the confidence to apply their maths to the world around them.
- The opportunity to contribute to society and be positive role models in their local community by achieving well.