# Bridgewater Curriculum Intent (Maths)

# In the Maths Faculty we are committed to providing a curriculum that is engaging, relevant and challenging, which builds rich knowledge and develops skills which prepare students for their next steps in education, training and employment.

Our aim is for pupils to be able to recall knowledge rapidly and accurately and become fluent in the fundamental skills of mathematics. We aim to develop conceptual understanding so that pupils can reason mathematically and solve problems. The curriculum is designed to ensure that all pupils progress smoothly from KS2 to KS4, building confidence in their Mathematical ability. The curriculum is sequenced to maximise opportunity for pupils to retrieve, practise and apply their skills and to make links between different branches of Mathematics.

In Maths we aim is to deliver an ambitious and demanding curriculum that encourages deep learning and measures higher-order skills. We aim to develop independent learners, who through determination and resilience, experience the satisfaction of solving suitably challenging problems. The curriculum is inclusive, recognising that students develop at different rates and have different learning needs. The curriculum is empowering, through promoting the development of transferable skills and giving all pupils, particularly the most disadvantaged, the knowledge and skills they need to succeed in life.

To enable this to happen our curriculum in planned around the following **6 dimensions**:

1. Clarity around the sequence of learning over 5 years.
2. Clarity around the knowledge and the application of knowledge.
3. Vocab and literacy
4. Subject content which is Aspiring, Inspiring and ‘Real World Learning'
5. Memory and Cognition.
6. Assessment. Clarity around the end points and the assessment of what students know and can do.

**Six Dimensions of the BWH Curriculum**

1. **Clarity around the sequence of learning over 5 years**

**Knowing and understanding more at each stage of the curriculum.**

In Maths, we follow the sequence of topics in the White Rose Maths Scheme of Work. The topics follow a logical order and content is broken down into ‘small steps’ to reflect the ‘building blocks’ nature of Maths. The scheme is designed to maximise opportunities for interleaving and includes regular retrieval of key skills. Within each topic, there is clear progression from KS2 to KS4 with appropriate levels of differentiation. The National Curriculum for KS3 is covered in Y7-9. Pupils develop skills in fluency, reasoning and problem solving, preparing them for the rigorous demands of the KS4 specification, which is taught in Y10-11. Opportunities for pupils to make links between topics are explicit within the scheme of work and maximised in the classroom.

1. **Clarity around the knowledge and the application of knowledge**

**Explicit teaching of subject knowledge and relevant background knowledge that can be applied to problem solving and is transferable between contexts and subjects.**

For each topic, the scheme of work explicitly states the knowledge and skills to be taught, indicating how this builds on prior learning and how the topic will be developed in the future. Every topic is supported by a knowledge organiser. Pupils develop their skills through frequent, varied and intelligent practice in order to become fluent. Pupils embed their learning further by applying their skills to a range of problems including multi-topic problems. Opportunities for retrieval of skills are built into the curriculum through starters and the sequencing of topics so that pupils can confidently transfer skills between topics and contexts.

1. **Vocab and Literacy**

**Vocabulary: Explicit teaching of vocabulary at all stages of a subject.**

In each lesson, key vocabulary is taught, to ensure that pupils’ vocabulary is not a barrier to their progress in Maths. Key vocabulary consists of a combination of key subject terminology and command words to improve cognition. Key vocabulary is included in knowledge organisers. Pupils are encouraged to use correct Mathematical vocabulary when giving reasons for their solutions. They are given frequent opportunities to develop their reasoning skills.

1. **Subject content which is Aspiring, Inspiring and ‘Real World Learning'**

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. The intention of the Maths curriculum at Bridgewater High School is to give pupils an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

1. **Memory and Cognition**

In Maths, the curriculum is structured to include spaced retrieval strategies to ensure that content is regularly re-visited and knowledge and skills are retained for use in future learning. We regularly use low stakes testing in the form of ‘exit tickets’ to test knowledge, skills and understanding, which we then use to inform future lesson planning. At the start of a topic we ensure pupils are secure in prior learning, including numeracy skills, to ensure that pupils don’t suffer from cognitive overload when learning new content. The interleaved approach to curriculum design maximises opportunity for pupils to commit their learning into their long-term memory.

1. **Assessment: Desired outcomes and how they are measured.**

The assessment of knowledge and understanding in Maths, takes the form of a range of both formative and summative strategies. Assessment in lessons is through quality questioning and exit tickets. Questionning is directed to pupils to probe understanding and test common misconceptions. Exit questions are used to assess learning during a topic, so that mistakes or misconceptions can be addressed before they become embedded. Standardised topic tests give pupils the opportunity to pull together their learning and identify which aspects of a topic are strengths or areas for development. Where relevant, pupils are set follow up work to address gaps in learning identified through topic tests. Topic tests are cumulative to some degree due to the building blocks nature of Maths. In addition, cumulative assessments are set at least once a year. Where possible, cumulative assessments are put through question by question analysis so that we can assess performance across year groups and sets, the results of which are used to inform future learning.