

Mathematics

Key Stage 3

Intent

Mathematics is an interconnected discipline that is essential to everyday life and provides a foundation for understanding the world. All students will become fluent in mathematical skills and will be able to apply these skills to a broad range of problems. Pupils will leave Patcham with the ability to reason mathematically and with a sense of enjoyment and curiosity about the subject.

In Key stage three students study; number, algebra, ratio and proportion, geometry and measure, probability and statistics. All pupils follow the same SOW which contains all of the National Curriculum objectives.

Our mathematics curriculum aims to ensure that all pupils;

- Become fluent in the fundamentals of mathematics
- Reason mathematically
- Can solve problems by applying their mathematics

Implementation

- Maths lessons are planned using an aspirational and well sequenced SOW. Teachers plan using a mastery approach; one topic per lesson. Lessons are well planned with a focus on depth not breadth.
- Maths lessons start with recall questions on fundamental skills.
- Teachers will break down concepts and skills into small steps, pupils will master each step.
- Teachers will use a variety of modelling strategies to explain how to solve mathematical problems. This will be supported by visuals and concrete resources.
- Questioning will be used to check understanding, draw out misconceptions and encourage deeper thinking. Pupils will use key vocabulary to explain and reason.
- Mini whiteboards will be used for guided practice and to check understanding.
- Pupils will practice skills through intelligent practice and then through a broad range of problem solving tasks.
- Reasoning skills developed through verbal and written work.
- Plenaries are used to review learning.
- Problem solving is a key element of every lesson. Teachers model how to solve problems.
- Whole class feedback is used to support students (forward facing feedback).
- Teachers will use weekly and monthly reviews of prior learning to reinforce long-term memory
- Formative and summative assessment is used to measure the acquisition of knowledge so that teachers know the gaps in student knowledge and can adapt their interventions, planning and classroom practice accordingly.

Impact

Effective teaching will lead to students acquiring, retaining and applying curriculum knowledge in the classroom and beyond.

All students make good progress and go on to take GCSE mathematics during KS4. The skills and knowledge that they have learnt form the foundations for their KS4 learning.

Mathematics

Key Stage 4

Intent

Mathematics is an interconnected discipline that is essential to everyday life and provides a foundation for understanding the world. All students will become fluent in mathematical skills and will be able to apply these skills to a broad range of problems. Pupils will leave Patcham with the ability to reason mathematically and with a sense of enjoyment and curiosity about the subject.

During Key stage four students study; number, algebra, ratio and proportion, geometry and measure, probability and statistics. Pupils either study all foundation or higher curriculum content objectives, all of which are outlined in our Edexcel SOW.

Our mathematics curriculum aims to ensure that all pupils;

- Become fluent in the fundamentals of mathematics
- Reason mathematically
- Can solve problems by applying their mathematics

Implementation

- Maths lessons are planned using an aspirational and well sequenced SOW. Teachers plan using a mastery approach; one topic per lesson. Lessons are well planned with a focus on depth not breadth.
- Maths lessons start with recall questions on fundamental skills.
- Teachers will break down concepts and skills into small steps, pupils will master each step.
- Teachers will use a variety of modelling strategies to explain how to solve mathematical problems. This will be supported by visuals and concrete resources.
- Questioning will be used to check understanding, draw out misconceptions and encourage deeper thinking. Pupils will use key vocabulary to explain and reason.
- Mini whiteboards will be used for guided practice and to check understanding.
- Pupils will practice skills through intelligent practice and then through a broad range of problem solving tasks.
- Reasoning skills developed through verbal and written work.
- Plenaries are used to review learning and as an opportunity to do GCSE questions.
- Problem solving is a key element of every lesson. Teachers model how to solve problems.
- Whole class feedback is used to support students (forward facing feedback).
- Teachers will use weekly and monthly reviews of prior learning to reinforce long-term memory
- Formative and summative assessment is used to measure the acquisition of knowledge so that teachers know the gaps in student knowledge and can adapt their interventions, planning and classroom practice accordingly.

Impact

Effective teaching will lead to students acquiring, retaining and applying curriculum knowledge in the classroom and beyond.

All students will make good progress in maths and achieve, at least, their target grade. Pupils will access their desired KS5 courses and many will go on to study mathematics further.