

Curriculum Information for the School Website

Subject: Mathematics

List of TLR Holders and their responsibilities:

Mr Brian Bibb	Head of Department
Mrs Harriet Mullan	KS4 Coordinator
Mrs Faye Joyner	KS3 Coordinator

Department aims:

Develop independent learners who are motivated and resilient in their approach to Maths. Develop an enjoyment and curiosity for the subject. Continually develop staff professionally providing innovative, fresh and increasingly effective methods and approaches to the subject.

Approaches to teaching and learning:

- Delivering content to engage all students
- Thoughtful use of technology
- Making the content relevant, tangible and accessible
- Providing timely feedback to move learning forward
- Embedding reasoning and problem solving skills

Why the department has adopted this curriculum plan: (Curriculum Intent):

Our curriculum plan provides clear differentiation so that students of all abilities are challenged to achieve and make progress.

Principles of sequencing learning in this subject:

The KS3 curriculum has been designed so students are building on the knowledge learnt in KS2. We are taking the principles learnt and developing students' thinking and understanding to a greater depth through application and problem solving. Topics are revisited twice in the KS3 cycle which allows students the opportunity to consolidate their understanding, having the time to become truly fluent in a topic and then build on their reasoning and problem solving skills.

The KS4 curriculum has been developed over four years since the introduction of the 9-1 GCSE grading system. We aim to build upon concepts that students are fluent in from KS3 and introduce the style of question seen in GCSE papers. Students cannot fully access more difficult topics without being fluent in the basics, so our curriculum has become more personalised for students of differing ability as it has been developed.

Curriculum Outline:

All students have online access to both KS3 and GCSE textbooks.

The KS3 Curriculum is differentiated into 3 Schemes of Learning so that all students are both supported and challenged. Each Scheme of Learning follows broadly the same topics.

The KS4 Curriculum is differentiated into 2 Schemes of Learning studying either the Foundation or Higher curriculum. Students can achieve up to a grade 5 on the Foundation curriculum. We use the exam board Edexcel.

Year 7	Autumn Term	Spring Term	Summer Term
Knowledge taught	Whole Number and Decimals Measures, perimeter and area Expressions and formula Fractions, decimals and percentages	Angles and Shapes Graphs Mental Calculations Collecting and representing data.	Transformations Equations Written and Calculator Methods Constructions
Skills taught	Mathematical resilience, reasoning, problem solving.	Mathematical resilience, reasoning, problem solving.	Mathematical resilience, reasoning, problem solving.
Assessments	End of topic assessments End of term assessment on Whole Number and Decimals Measures, perimeter and area Expressions and formula.	End of topic assessments End of term assessment on Fractions, decimals and percentages Angles and Shapes Graphs Mental Calculations	End of topic assessments End of year assessment on all topics

Year 8	Autumn Term	Spring Term	Summer Term
Knowledge taught	Sequences 3D Shape Ratio and Proportion Probability	<i>We now build upon and develop the knowledge that has been learnt so far.</i> <i>At this point all students switch to the next level of KS3 Scheme of learning appropriate to their group.</i> Whole number and decimals Measures, perimeter and area. Expressions and Formulae Fractions, decimals and percentages	Angles and Shapes Graphs Mental Calculations Collecting and representing data or Decimal Calculations Statistics
Skills taught			
Assessments	End of topic assessments.	End of topic assessments End of term assessment on:	End of topic assessments

	End of term assessment on: Sequences 3D Shape and ratio Proportion.	Probability Whole numbers and decimals Expressions and Formulae	End of year assessment on all topics
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Year 9	Autumn Term	Spring Term	Summer Term
Knowledge taught	Transformation and Symmetry or scale Equations Powers and Roots Constructions and Pythagoras	Sequences 3D Shape and Trigonometry Ratio and Proportion Probability	Start of the GCSE Curriculum
Skills taught	Mathematical resilience, reasoning, problem solving.	Mathematical resilience, reasoning, problem solving.	Mathematical resilience, reasoning, problem solving.
Assessments	End of topic assessments End of term assessment on: Transformation and Symmetry or scale Equations Powers and Roots	End of topic assessments End of term assessment on: Constructions and Pythagoras Sequences 3D Shape and Trigonometry Ratio and Proportion	End of topic assessments End of year assessment is a GCSE baseline assessment

GCSE Syllabus Information:

Year 10	Autumn Term 1	Spring Term 1	Summer Term 1
Knowledge taught	Straight line graphs Angles in polygons, congruence and similarity Area Equations and inequalities Probability	Equations Pythagoras Transformations	Number Algebraic manipulation Area and constructions
Skills taught	Exam technique, mathematical reasoning, problem	Exam technique, mathematical reasoning, problem solving	Exam technique, mathematical reasoning, problem

	solving		solving
Assessments	Chapter test	Chapter test	Year 10 Exam
Year 10	Autumn Term 2	Spring Term 2	Summer Term 2
Knowledge taught	Sequences Graphs Ratio	Data handling Volume and surface area Trigonometry Graphs	Data Percentages Indices and standard form Quadratics
Skills taught	Exam technique, mathematical reasoning, problem solving	Exam technique, mathematical reasoning, problem solving	Exam technique, mathematical reasoning, problem solving
Assessments	Chapter test	Chapter test	Chapter test

Year 11	Autumn Term 1	Spring Term 1	Summer Term 1
Knowledge taught	Volume, surface area of 3D shapes Accurate calculations Graphs	Proportion and percentages	Revision
Skills taught	Exam technique	Exam technique	Exam technique
Assessments	Chapter test	Chapter test	
Year 11	Autumn Term 2	Spring Term 2	Summer Term 2
Knowledge taught	Pythagoras and trigonometry Sequences	Revision	Revision
Skills taught	Exam technique	Exam technique	Exam technique
Assessments	Chapter test, November Pre Public Exam	March Pre Public Exam	

How students will receive feedback to enhance their knowledge and skills:

Along with the ongoing written and verbal feedback that will occur in every lesson, the KS3 homework assessments and GCSE Chapter test will be individually marked by teachers and whole class feedback given. KS3 students who need further help with knowledge and understanding of key concepts are invited to KS3 club where individual guidance is

given. Students that achieve less than 40% on GCSE chapter tests will be invited to after school intervention sessions.

Reading List (Key Stage 3):

<http://www.murderousmaths.co.uk/books/books.htm>

Reading List (GCSE):

The Simpsons and Their Mathematical Secrets - Simon Singh

How Many Socks Make a Pair?: Surprisingly Interesting Everyday Maths Paperback - Rob Eastaway

Useful weblinks:

Every student will be given individual passwords at the beginning of the year for the 3 following websites:

<https://vle.mathswatch.co.uk/vle/>

<https://www.mymaths.co.uk/>

<https://www.kerboodle.com/users/login>

General websites

<https://www.mathsisfun.com/>

<https://www.bbc.com/bitesize/subjects/zqhs34j>

<https://www.onmaths.com/>

<https://www.mathsgenie.co.uk/gcse.html>

Extracurricular and enrichment:

KS3 Maths Club for Year 7s and 8s

Year 9 Maths Club

Year 10 Maths Club

Year 11 Revision drop in

Year 11 Maths A-Level Club

Junior Maths Challenge

Intermediate Maths Challenge

Spiritual, Moral, Social and Cultural opportunities:

Tessellations - Islamic art

Fractions - Flags of the world

Data handling - using data on world religions to plot graphs raises awareness of other religions, people from different social backgrounds and different cultures.

Character development and British Values opportunities:

Data handling - when appropriate, classes investigate data that reflects the diversity of British society.

Percentages - percentages of the British population who are certain ethnicities, income brackets, celebrating the diversity of the British population.