Hazel Wood
High School

Maths
Curriculum Overview
Hazel Wood High School

Part of the Oak Learning Partnership

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Hazel Wood High School

Our Curriculum Content:

As a knowledge-based subject, we believe that knowledge is the key to our students having a deeper understanding. Our curriculum allows our students to build on what they already know and develop the skills required to understand the application of maths in the real world.

Our curriculum is sequenced carefully to ensure a balanced delivery of content across the five strands (geometry, ratio and proportion, algebra, number, and statistics) and to ensure it is delivered to ensure progress over time. Our curriculum follows blocked schemes of work, which allows for depth and breadth of learning within each strand of mathematics. Each block of learning includes opportunities to develop fluency skills; construct chains of reasoning using relevant knowledge, alongside relevant terminology; and solve increasingly complex problems in a systematic and coherent way.

Key Stage 4 students will follow foundation or higher pathway. This scheme of work allows students to work at the level appropriate to them. Students continue to study the full range of the mathematical curriculum strands, in line with Edexcel GCSE specification. Following on from KS3, they continue to have opportunities to solve problems and explain their reasoning with an increase in GCSE-Style exam questions.

Year 7 Maths						
Year 7	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	• Number sense and calculations	• Number sense and calculations • Expressions and equations • Measures • 2D shapes • Perimeter and area	• Perimeter and area • Coordinates • Factors, multiples and primes • Fractions	• Fractions • Brackets • Angles	• Angles • Handling data and statistical diagrams • Proportion	• Fractions, decimals and percentages • Probability
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Number sense • Adding and subtracting • Multiplying • Dividing • Calculating with negative numbers • Order of operations	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Order of operations • Expressions • Substitution • Solving equations • Time • Measures • Line and shape properties • Perimeter	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Area • Coordinates and shapes • Factors and multiples • Primes • Writing and comparing fractions	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Writing and comparing fractions • Adding and subtracting fractions • Single brackets • Angles	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Finding unknown angles • Averages and range • Tables and charts • Collecting and presenting data • Proportion word problems	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Multiplying and dividing fractions • Fractions of amounts • Fractions, decimals and percentages • Theoretical probability
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved in a full subject glossary at the back of every student's book.					
Assessment	Students are to complete a midpoint assessment during Half Term 1, 3 and 5. Question 1 to 3: Focus on A01 can students recall Question 4 to 6: Focus on A02 can students adapt and apply their knowledge Question 7 to 10: Focus on A03 can students' problem solve Students are to complete an end of term assessment at the end of Term 2, Term 4, and Term 6 This will be out of 60 and assess what has been taught.					

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Year 8 Maths						
Year 8	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	• Percentages • Money • Indices • Equations	• Equations • Sequences • Ratio	• Rounding • Coordinates • Area • Circles • Standard form	• Standard form • Venn diagrams • 3D shapes • Surface area and Volume	• Linear graphs • Transformations • Angles • Statistical diagrams	• Inequalities • Brackets • Algebraic Fractions • Recurring decimals
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Percentages of amounts • Percentage change • Calculating with money • Index laws • Solving equations	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Solving equations • Term-to-term rules • Position-to-term rules • Ratio • Scale diagrams	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Significant figures • Coordinates and midpoints • Area and units • Area and circumference • Standard form and ordinary numbers	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Standard form and ordinary numbers • Venn diagrams • Factors, multiples and primes • Nets • Surface area and volume	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Plotting graphs and finding equations • Transforming shapes • Finding unknown angles • Drawing and interpreting statistical diagrams	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Linear inequalities • Double brackets • Fractions review • Algebraic fractions • Fractions and recurring decimals
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved in a full subject glossary at the back of every student's book.					
Assessment	Students are to complete a midpoint assessment during Half Term 1, 3 and 5. Question 1 to 3: Focus on A01 can students recall Question 4 to 6: Focus on A02 can students adapt and apply their knowledge Question 7 to 10: Focus on A03 can students' problem solve Students are to complete an end of term assessment at the end of Term 2, Term 4 and Term 6 This will be out of 60 and assess what has been taught.					

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Year 9 Maths						
Year 9	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	• Fractions and Percentages • Probability • Standard Form • Inequalities	• Quadratic equations • Formulae • Constructions • Circles • Rounding • 3D shapes	• Pythagoras' Theorem • Ratio and Proportion • Linear Graphs	• Linear Graphs • Compound Measures • Motion-Time Graphs • Quadratic Graphs • Angles and Bearings	• Angles and Bearings • Transformations • Similarity and Congruence	• Handling Data and Statistical Diagrams • Vectors
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Fractions, decimals and percentages • Percentage change • Theoretical and experimental probability • Calculations in standard form • Linear Inequalities	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Factorising and solving quadratic equations • Rearranging formulae • Constructing bisectors and perpendicular lines • Circles and cylinders • Error Intervals • Representations of 3D shapes	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Pythagoras' Theorem in 2D • Ratio • Proportion word problems • Plotting graphs	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Finding equations of linear graphs • Speed and rates • Distance-time graphs • Plotting and interpreting quadratic graphs • Angles	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Bearings • Transforming shapes • Similarity • Congruence	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Collecting and presenting data • Scatter graphs • Grouped data • Column Vectors
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved in a full subject glossary at the back of every student's book.					
Assessment	Students are to complete a midpoint assessment during Half Term 1, 3 and 5. Question 1 to 3: Focus on A01 can students recall Question 4 to 6: Focus on A02 can students adapt and apply their knowledge Question 7 to 10: Focus on A03 can students' problem solve Students are to complete an end of term assessment at the end of Term 2, Term 4 and Term 6 This will be out of 60 and assess what has been taught.					

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Year 10 Foundation Maths						
Year 10	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	• Percentages • Surface area and volume, and Simultaneous equations	• Formulae • Trigonometry • Constructions	• Linear graphs • Real-life graphs • Set notation • Tree diagrams	• Compound measures • Ratio • Graphs	• Sequences • Handling data • Proportion • Transformations • Rounding	• Indices • Brackets • Handling data and statistical diagrams
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Repeated percentage change • Surface Area • Volume • Solving simultaneous equations using elimination • Solving simultaneous equations using substitution • Solving simultaneous equations graphically • Constructing and solving simultaneous equations	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Changing the subjects of formulae with two or more steps. • Changing the subject when the subject appears more than once • Understanding sin, cos, tan • Finding unknown sides in right-angled triangles • Finding unknown angles in right-angled triangles • Using the exact values of	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Finding the equation of a straight line from its gradient and a point • Finding the equation of a straight line from two points on the line • Equations of parallel lines • Equations of parallel and perpendicular lines* • Plotting linear real-life graphs • Using and interpreting linear real-life graphs • Finding equations of linear real-life graphs • Sketch graphs of water flows • Venn diagrams with set notation • Using set notation	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Calculating with density • Calculating with pressure • Combining ratios • Calculating with ratios and algebra • Changing ratios • Plotting velocity-time graphs • Calculating acceleration from velocity-time graphs • Graphs of cubic functions • Graphs of reciprocal functions	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Position-to-term rules for arithmetic sequences • Position-to-term rules for sequences of patterns • Position-to-term rules for geometric sequences • Sampling and bias • Interpreting direct proportion equations • Interpreting inverse proportion equations • Graphs of direct and inverse proportion	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Index rules with positive indices • Index rules with negative indices • Simplifying expressions using index laws • Expanding double brackets • Factorising quadratic expressions of the form x^2+bx+c • Factorising the difference of two squares

		trigonometric ratios • Angles of elevation and depression* • Calculating with trigonometry and bearings* • Constructing Loci	• Tree diagrams for independent events • Tree diagrams for dependent events	• Graphs of exponential functions	• Combining transformations • Finding error intervals • Finding error intervals for truncated numbers	• Factorising to solve quadratic equations of the form x^2+bx+c=0 • Interpreting frequency tables with grouped data • Finding averages from grouped data • Drawing stem-and-leaf diagrams • Interpreting stem-and-leaf diagrams • Drawing line graphs • Interpreting line graphs • Drawing and interpreting frequency polygons
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved through fortnightly homework and there is a full subject glossary at the back of every student's book. In this subject, students also utilise a personal glossary where they record words that are new to them. These glossaries are used by the teacher to test whether students have learnt and know new words.					
Assessment	Students are to complete a midpoint assessment during Half Term 1, 3 and 5. Question 1 to 3: Focus on A01 can students recall Question 4 to 6: Focus on A02 can students adapt and apply their knowledge Question 7 to 10: Focus on A03 can students' problem solve Students are to complete to complete a full round of mock exams: 3 papers, 1 calculator and 2 non calculator at Foundation level.					

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Year 10 Higher Maths						
Year 10	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	Percentages Surface area and volume, and Simultaneous equations	Formulae Trigonometry Constructions	Linear graphs Real-life graphs Set notation Tree diagrams	Compound measures Ratio Graphs	Sequences Handling data Proportion Transformations Rounding	Recurring decimals Brackets Handling data and statistical diagrams
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Repeated percentage change • Surface Area • Volume • Solving simultaneous equations using elimination • Solving simultaneous equations using substitution • Solving simultaneous equations graphically • Constructing and solving simultaneous equations	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Changing the subjects of formulae with two or more steps. • Changing the subject when the subject appears more than once • Understanding sin, cos, tan • Finding unknown sides in right-angled triangles • Finding unknown angles in right-angled triangles • Using the exact values of trigonometric ratios	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Finding the equation of a straight line from its gradient and a point • Finding the equation of a straight line from two points on the line • Equations of parallel lines • Equations of parallel and perpendicular lines* • Plotting linear real-life graphs • Using and interpreting linear real-life graphs • Finding equations of linear real-life graphs • Sketch graphs of water flows • Venn diagrams with set notation • Using set notation	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Calculating with density • Calculating with pressure • Combining ratios • Calculating with ratios and algebra • Changing ratios • Plotting velocity-time graphs • Calculating acceleration from velocity-time graphs • Graphs of cubic functions • Graphs of reciprocal functions	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Position-to-term rules for arithmetic sequences • Position-to-term rules for sequences of patterns • Position-to-term rules for geometric sequences • Sampling and bias • Interpreting direct proportion equations • Interpreting inverse proportion equations • Graphs of direct and inverse proportion	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Converting fractions to recurring decimals • Converting recurring decimals to fractions • Expanding triple brackets • Completing the square • Factorising quadratic expressions of the form ax^2+bx+c • Factorising to solve quadratic equations of the form

		• Angles of elevation and depression* • Calculating with trigonometry and bearings* • Constructing Loci	• Tree diagrams for independent events • Tree diagrams for dependent events	• Graphs of exponential functions	• Combining transformations • Finding error intervals • Finding error intervals for truncated numbers	ax^2+bx+c= 0 • Drawing cumulative frequency graphs • Interpreting cumulative frequency graphs • Drawing box plots • Interpreting box plots • Comparing populations using box plots and cumulative frequency graphs
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved through fortnightly homework and there is a full subject glossary at the back of every student's book. In this subject, students also utilise a personal glossary where they record words that are new to them. These glossaries are used by the teacher to test whether students have learnt and know new words.					
Assessment	Students are to complete a midpoint assessment during Half Term 1, 3 and 5. Question 1 to 3: Focus on A01 can students recall Question 4 to 6: Focus on A02 can students adapt and apply their knowledge Question 7 to 10: Focus on A03 can students' problem solve Students are to complete to complete a full round of mock exams: 3 papers, 1 calculator and 2 non calculator at Higher level.					

Year 11 Foundation Mathematics						
Year 11	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	• Factors, multiples and primes • Fractions • Expressions • Angles	• Right-angled triangles • Surface area and volume • Statistical diagrams • Probability • Inequalities	• Vectors • Percentages • Compound measures • Ratio and proportion	• Standard Form • Sequences • Linear Graphs	Revision	Revision
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Highest common factor • Lowest common multiple • Fractions • Mixed Numbers • Simplifying expressions • Solving Equations • Simultaneous equations • Finding unknown angles	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Pythagoras Theorem • Trigonometry • Surface area • Volume • Drawing and interpreting statistical diagrams • Theoretical and experimental probability • Linear inequalities	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Vector problems • Percentage change • Calculating with compound measures • Working with ratios and algebra • Proportion word problems	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Calculating with standard form • Arithmetic and geometric sequences • Equations of linear graphs		
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved through fortnightly homework and there is a full subject glossary at the back of every student's book. In this subject, students also utilise a personal glossary where they record words that are new to them. These glossaries are used by the teacher to test whether students have learnt and know new words.					
Assessment	In November, students will sit a Mock examination. The result from this examination will be reported to parents, alongside a realistic expected grade for the subject. Findings from the Mock exam will result in some explicit reteaching so that students can identify their own areas for development and areas of success. This will also enable the course leader to adapt teaching where they may be gaps in knowledge.		In February, students will sit a Mock examination. The result from this examination will be reported to parents, alongside a realistic expected grade for the subject. Findings from the Mock exam will result in some explicit reteaching so that students can identify their own areas for development and areas of success. This will also enable to course leader to adapt teaching where they may be gaps in knowledge.		Students will sit their Mathematics GCSE exam in May/June.	

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Year 11 Maths Higher						
Year 11	**Half Term 1**	**Half Term 2**	**Half Term 3**	**Half Term 4**	**Half Term 5**	**Half Term 6**
Unit Title	Surds Algebraic fractions Equations Pythagoras' theorem and trigonometry	Pythagoras' theorem and trigonometry Circle geometry Statistical diagrams Probability Inequalities	Functions Transformations Iteration Algebraic proof Similarity	Geometric proof Graphs	Revision	Revision
Key knowledge and understanding that enables skill building.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Calculating with surds • Rationalising denominators • Calculating with algebraic fractions • Solve quadratic equations • Simultaneous equations • Trigonometric ratios and graphs	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Non-right-angled trigonometry • 3D Pythagoras' theorem and trigonometry • Circle theorems • Histograms • Conditional probability • Linear and quadratic inequalities	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Substituting into functions • Finding composite and inverse functions • Transforming graphs • Using iterative formulae • Writing algebraic proofs • Area and volume of similar shapes	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the following: • Vector proofs • Writing geometric proofs • Non-linear graphs	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the topics required for Higher GCSE Mathematics.	Lesson Objectives in our Medium-Term Plans are sequenced to ensure that students know and understand the topics required for Higher GCSE Mathematics.
Vocabulary	All lessons, throughout the course, introduce key terminology at the start, to ensure that students know key words and subject terminology. In addition to this, the key terminology for the course is recalled and retrieved in a full subject glossary at the back of every student's book.					
Assessment	In November, students will sit a Mock examination. The result from this examination will be reported to parents, alongside a realistic expected grade for the subject. Findings from the Mock exam will result in some explicit reteaching so that students can identify their own areas for development and areas of success. This will also enable to course leader to adapt teaching where they may be gaps in knowledge.		In February, students will sit a Mock examination. The result from this examination will be reported to parents, alongside a realistic expected grade for the subject. Findings from the Mock exam will result in some explicit reteaching so that students can identify their own areas for development and areas of success. This will also enable to course leader to adapt teaching where they may be gaps in knowledge.		Students will sit their Mathematics GCSE exam in May/June.	

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