

Year 8 Curriculum Overview

Rationale: The Year 8 curriculum is designed to extend student's knowledge from Year 7, building on concepts in number, measure, probability and ratio and proportion, as well as introducing new concepts in algebra and geometry. Over time students will see the links between the various concepts and topics and be able to answer multi-step problems covering a range of new learning. This year will provide a solid foundation for future progress in Key Stage 3 and 4.

Term/Length of Time	Outline	Assessment/Teacher Feedback Opportunities	Homework and Literacy resources
Autumn 7 lessons per fortnight for approximately 15 weeks. 			

	<p>common multiple and prime factors</p> <ul style="list-style-type: none"> • Operations with negative numbers • Squares, cubes and roots • Laws of indices <p>These skills are often revisited in later modules.</p>		<p>Non - SPARX homework will be set every third week. SPARX will be set otherwise. These may be marked by the teacher or self-marked by the student.</p> <p>Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface.</p> <p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface.</p> <p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Unit 1 links to aid revision A/B band Factors, Multiples and Primes C/D Band</p>
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Approx 2 weeks	<p>Unit 2 – Sequences Here students have the opportunity to draw upon their algebraic manipulation knowledge from Year 7 and apply it to sequences. There is opportunity for students to see real life examples of sequences here too. Topics covered include:</p> <ul style="list-style-type: none"> • Term to term rules • Position to term rules • Special sequences 	Feedback throughout lessons and FAR marked homework.	<p>Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface. Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Oak National Academy lessons and resources Sequences</p> <p>Unit 2 Links to aid revision A/B band Finding the nth term C/D Band Finding number patterns</p>

<p>Approx 3 weeks</p>	<p>Unit 3 – Non calculator number operations Once students have a clear understanding of the types of number from unit 1 we can build upon this knowledge to calculate with numbers, including:</p> <ul style="list-style-type: none"> • Rounding numbers • Place value • Operations with decimals • BIDMAS (order of operations) • Calculations from known calculations 	<p>Feedback throughout lessons and FAR marked homework.</p> <p>Unit 1-3 Assessment - 60 minutes in lesson. Students will receive strengths and areas for development.</p> <p>At the end of every 2-3 modules students sit an assessment, covering all aspects taught and some prior learning from previous modules. All Year 7 students sit the Module assessments in exam conditions in their classrooms. Assessments are out of 50 marks. Assessments are marked by the class teacher, fed back to students, who have the opportunity to improve their work. A personalised checklist is then completed by the student on the front of the test for them to use in their future revision.</p>	<p>Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface.</p> <p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Revising for Maths: There are many ways students can revise in Year 7 for Maths:</p> <ul style="list-style-type: none"> • Use a Key Stage 3 Maths revision guide • Use websites listed above to watch videos, make notes and practice questions where answers are provided. • Use a notepad or additional book to make revision notes – condensing notes from their exercise books to key information needed. • Create mind maps/posters <p>Oak National Academy lessons and resources Accuracy and Estimation (lessons 1,3 and 4) Order of operations (lesson 1 and 2)</p> <p>Unit 3 Links to aid revision A/B band Rounding significant figures C/D Band Rounding whole numbers</p>
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			Recommended Reading The Number Devil – A Mathematical Adventure by Hans Magnus Enzenberger
Approx 3 weeks	Unit 4 – Angles Students explore geometrical reasoning and angle rules. There is an opportunity here to consider how algebra can help us when solving geometrical problems. Topic areas include: <ul style="list-style-type: none"> Angles in triangles and quadrilaterals Angles on a straight line and around a point Angles in polygons 	Feedback throughout lessons and FAR marked homework.	Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface. Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink Oak National Academy lessons and resources Angles , Angles in Polygons Unit 4 Links to aid revision A/B band Angles in polygons C/D Band Angles in triangles and quadrilaterals
Approx 3 weeks	Unit 5 – Probability Here there is an opportunity for students to link their knowledge of fractions, decimals and percentages into the real world. Students	Feedback throughout lessons and FAR marked homework	Optional homework tasks and Literacy resources Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons.

	<p>are able to have hands on experience of how probability works both theoretically and experimentally.</p> <p>Topics covered include:</p> <ul style="list-style-type: none"> • Probability scale • Mutually exclusive events • Probability diagrams 		<p>Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Oak National Academy lessons and resources Probability, Sets and Venn Diagrams (Lessons 1-5)</p> <p>Unit 5 Links to aid revision A/B band Probability of an event C/D Band The probability scale</p> <p>Recommended Reading Snowflake Seashell Star by Alex Bellos</p>
<p>Spring 7 lessons a fortnight for approximately 12 weeks</p> <p>Approx 3 weeks</p>	<p>Unit 6 – Fractions and Percentages Students are now able to broaden their knowledge from module 3 to incorporate fractions and percentages, including:</p> <ul style="list-style-type: none"> • Operations with fractions • Fractions and percentage of an amount • Percentage increase and decrease and simple interest 	<p>Feedback throughout lessons and FAR marked homework.</p> <p>Units 4-6 Assessment 60 minutes in lesson Students will receive strengths and areas for development.</p>	<p>Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface.</p> <p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Oak National Academy lessons and resources Conceptualising and Comparing Fractions Manipulating and Calculating with Fractions Percentages (lessons 4,5,7 and 8)</p>

			<p>Unit 6 Links to aid revision</p> <p>A/B band</p> <p>Percentage increase</p> <p>How to work out interest</p> <p>C/D Band</p> <p>How to simplify fractions</p> <p>How to find a fraction of an amount</p>
Approx 2 weeks	<p>Unit 7 – Calculator number operations</p> <p>Students need to develop their use of calculator, this is particular difference from Key Stage 2 which will prepare them for Key Stage 4. Topics covered include:</p> <ul style="list-style-type: none"> • Use of calculator • Estimation • Calculator problem solving 	Feedback throughout lessons and FAR marked homework.	<p>Optional homework tasks and Literacy resources</p> <p>Students can complete additional SPARX homework every time it is set on the SPARX interface.</p> <p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub.</p> <p>These include videos, questions and answers linked to the module being taught in lessons.</p> <p>Module Instruction sheets are colour coded and represent the following target bands:</p> <p>Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Oak National Academy lessons and resources</p> <p>Accuracy and Estimation (lessons 2-8)</p> <p>Unit 7 Links to aid revision</p> <p>A/B band</p> <p>How to multiply with decimals</p> <p>C/D Band</p> <p>What is estimating?</p> <p>Recommended Reading</p> <p>Sherlock Bones and the Case of the Crown Jewels – Tim Collins</p>

Approx 3 weeks	Unit 8 – Equations and formulae Returning to abstract mathematics we build on our prior knowledge from Year 7 to include solving more complex equations. Topics include: <ul style="list-style-type: none"> Linear equations Rearranging formula 	Feedback throughout lessons and FAR marked homework. Units 7-8 Assessment 60 minutes in lesson Students will receive strengths and areas for development.	Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface. Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink Oak National Academy lessons and resources Forming and Solving Equations Solving simultaneous equations (lesson 7) Unit 8 Links to aid revision A/B band Changing the subject of a formula C/D Band How to solve an equation with x on one side Solving equations with brackets
Summer 7 lessons a fortnight for approximately 14 weeks Approx 2 weeks	Unit 9 – Ratio and proportion Building on our prior knowledge from unit 6 we look at how proportional relationships work and link to ratio, including: <ul style="list-style-type: none"> Simplifying ratios Sharing in a ratio 	Feedback throughout lessons and FAR marked homework. End of Year Maths Assessment This is a summative assessment of all topics learnt throughout Year 8 and assesses whether students have retained and can combine information.	Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink

	<ul style="list-style-type: none"> • Converting units • Proportion • Best buys 	Students will receive detailed feedback, a PLC and will have opportunities to improve their learning in lessons.	<p>Oak National Academy lessons and resources</p> <p>Ratio Proportion (Lessons 1-5)</p> <p>Unit 9 Links to aid revision A/B band Solving ratio problems C/D Band Equivalence and simplifying ratio</p> <p>Recommended Reading</p> <p>Women in Science: 50 Fearless Pioneers Who Changed the World – by Rachel Ignatowski</p>
Approx 2 weeks	<p>Unit 10 – Measures and mensuration</p> <p>Building on our year 7 knowledge of geometry and formulae this modules allows students to explore mensuration to a deeper level. This unit will cover the following:</p> <ul style="list-style-type: none"> • Area and perimeter • Area and circumference of circles • Volume and surface area • Scale drawings and maps 	Feedback throughout lessons and FAR marked homework.	<p>Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub.</p> <p>These include videos, questions and answers linked to the module being taught in lessons.</p> <p>Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink</p> <p>Oak National Academy lessons and resources</p> <p>Area of 2D shapes Circles (lessons 1-8) Volume and Surface area of prisms</p> <p>Unit 10 Links to aid revision A/B band Surface area and volume of prisms</p>

			C/D Band Area of compound shapes Perimeter
Approx 3 weeks	Unit 11 – Functions and graphs We return to more abstract mathematical concepts looking to build on our knowledge from unit 2 to understand functions, including: <ul style="list-style-type: none"> • Coordinates in all four quadrants • Vertical and horizontal lines • Plotting straight line graphs • Understanding $y=mx+c$ 	Feedback throughout lessons and FAR marked homework.	Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface. Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink Oak National Academy lessons and resources Linear Graphs (lessons 1,2,5 and 6) Real life graphs (lessons 3 and 5) Unit 11 Links to aid revision A/B band Linear graphs Gradients C/D Band Plotting coordinates in all 4 quadrants Horizontal and vertical lines Recommended Reading Murderous Maths – Desperate Measures – Kjartan Poskitt

Approx 2 weeks	Unit 12 – Statistics Recalling knowledge from the beginning of year 7 this unit allows students the opportunity to explore real life mathematical concepts and in particular allows them to have practical experience of statistical experiments. Topics areas covered include: <ul style="list-style-type: none"> Averages from ungrouped and grouped data Statistical diagrams 	Feedback throughout lessons and FAR marked homework.	Optional homework tasks and Literacy resources Students can complete additional SPARX homework every time it is set on the SPARX interface. Module Instruction Sheets will be uploaded by teachers at the start of the module on to Go4Schools. All of these can be accessed on the Digital Learning Hub. These include videos, questions and answers linked to the module being taught in lessons. Module Instruction sheets are colour coded and represent the following target bands: Band A Green, Band B Orange, Band C Yellow, Band D Pink Oak National Academy lessons and resources Univariate data (Lessons 5-12) Bivariate data (lessons 3 and 4) Unit 12 Links to aid revision A/B band Averages from grouped frequency Pie charts C/D Band Mean median mode and range Averages from a frequency table
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