factor, lowest

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 Outline Assessment/Teacher Feedback Homework and Literacy resources of Time **Opportunities** The Year 8 curriculum builds directly FAR task will be marked by the Autumn Home learning is set weekly in Maths in Year 8 from the Year 7 curriculum. 7 lessons per teacher where feedback will be Students cover the same broad topic fortnight for provided, an action will be given One FAR (Feedback, Action, Response) task to be set every 3 weeks. areas over the course of the year approximately FAR tasks all follow the same format as seen below: for students to improve. allowing them to revisit and embed 15 weeks. their prior knowledge and then to Feedback from TEACHERS NAME given on DATE move their learning forwards into Literacy: This section focused on: more complex concepts. Review weeks to aid cyclicity and recap Word Level Text Level Sentence Level previously learnt topics are also □ Your literacy section shows good understanding – well done! embedded within the scheme of Literacy ACTION learnina. □ You have not attempted the literacy section – please complete □ Develop your answer further, using this KEYWORD Extension (teacher to write extens You have shown good knowledge and effort within all areas within this FAR. Well □ You have shown some understanding of Number and Powers although you have made some errors. Approx 2 Unit 1 – Types of number weeks The areas that you need to work on as part of your revision are: and power – Use of standard form Students revisit the building Simplifying indices Products of prime factors blocks of mathematics, types □ Knowledge of square and cube roots of number, ensuring they □ You have not demonstrated knowledge of the skills assessed within this FAR task_ and need to add this to your revision. Please see me in class DIRT time. have strong foundations to apply to more complex Action: (Please complete your action in RED) content to come. Multiples, factors Make corrections to your Complete the extension Watch the teacher and primes demonstration to help you activity. improve learning Highest common

common multiple and prime factors

- Operations with negative numbers
- Squares, cubes and roots
- Laws of indices

These skills are often revisited in later modules.

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.

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

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Unit 1 links to aid revision

A/B band

Factors, Multiples and Primes

C/D Band

			Positive and Negative numbers
			Oak National Academy lessons and resources Factors and Multiples, Positive and Negative Numbers, Prime Factor Decomposition, Indices and Standard form (lessons 1-4, 8-12)
			Recommended Reading Murderous Maths – Numbers: The Key to the Universe by Kjartan Poskitt
Approx 2 weeks	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: • Term to term rules • Position to term rules • Special sequences	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 Sequences Unit 2 Links to aid revision A/B band Finding the nth term C/D Band Finding number patterns

Approx 3 weeks

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:

- Rounding numbers
- Place value
- Operations with decimals
- BIDMAS (order of operations)
- Calculations from known calculations

Feedback throughout lessons and FAR marked homework.

Unit 1-3 Assessment - 60 minutes in lesson.

Students will receive strengths and areas for development.

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.

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

Revising for Maths:

There are many ways students can revise in Year 7 for Maths:

- 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

Oak National Academy lessons and resources

Accuracy and Estimation (lessons 1,3 and 4)
Order of operations (lesson 1 and 2)

Unit 3 Links to aid revision

A/B band

Rounding significant figures

C/D Band

Rounding whole numbers

			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: • 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.

	are able to have hands on experience of how probability works both theoretically and experimentally. Topics covered include: Probability scale Mutually exclusive events Probability diagrams		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 Probability, Sets and Venn Diagrams (Lessons 1-5) Unit 5 Links to aid revision A/B band Probability of an event C/D Band The probability scale Recommended Reading
			Snowflake Seashell Star by Alex Bellos
Spring	Unit 6 – Fractions and	Feedback throughout lessons	Optional homework tasks and Literacy resources
7 lessons a	Percentages	and FAR marked homework.	Students can complete additional SPARX homework every time it is set on
fortnight for	Students are now able to		the SPARX interface.
approximately	broaden their knowledge		Module Instruction Sheets will be uploaded by teachers at the start of the
12 weeks	from module 3 to incorporate	Units 4-6 Assessment	module on to Go4Schools. All of these can be accessed on the Digital
	fractions and percentages,	60 minutes in lesson	Learning Hub.
Approx 3	including:	Students will receive strengths	These include videos, questions and answers linked to the module being
weeks	 Operations with 	and areas for development.	taught in lessons.
	fractions		Module Instruction sheets are colour coded and represent the following
	 Fractions and 		target bands:
	percentage of an amount		Band A Green, Band B Orange, Band C Yellow, Band D Pink
	Percentage increase		Oak National Academy lessons and resources
	and decrease and		Conceptualising and Comparing Fractions
	simple interest		Manipulating and Calculating with Fractions
	5p.cc. cot		Percentages (lessons 4,5,7 and 8)
			reicentages (lessons 4,5,7 and 6)

			Unit 6 Links to aid revision A/B band Percentage increase How to work out interest C/D Band How to simplify fractions How to find a fraction of an amount
Approx 2 weeks	Unit 7 – Calculator number operations 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: Use of calculator Estimation Calculator problem solving	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 Accuracy and Estimation (lessons 2-8) Unit 7 Links to aid revision A/B band How to multiply with decimals C/D Band What is estimating? Recommended Reading Sherlock Bones and the Case of the Crown Jewels – Tim Collins

Approx 3	Unit 8 – Equations and	Feedback throughout lessons	Optional homework tasks and Literacy resources
weeks	formulae	and FAR marked homework.	Students can complete additional SPARX homework every time it is set on
	Returning to abstract		the SPARX interface.
	mathematics we build on our	Units 7-8 Assessment	Module Instruction Sheets will be uploaded by teachers at the start of the
	prior knowledge from Year 7	60 minutes in lesson	module on to Go4Schools. All of these can be accessed on the Digital
	to include solving more	Students will receive strengths	Learning Hub.
	complex equations. Topics	and areas for development.	These include videos, questions and answers linked to the module being
	include:		taught in lessons.
	 Linear equations 		Module Instruction sheets are colour coded and represent the following
	Rearranging formula		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	Unit 9 – Ratio and	Feedback throughout lessons	Module Instruction Sheets will be uploaded by teachers at the start of the
7 lessons a	proportion	and FAR marked homework.	module on to Go4Schools. All of these can be accessed on the Digital
fortnight for	Building on our prior		Learning Hub.
approximately	_	End of Year Maths Assessment	These include videos, questions and answers linked to the module being
14 weeks	look at how proportional	This is a summative assessment	taught in lessons.
	relationships work and link to	of all topics learnt throughout	Module Instruction sheets are colour coded and represent the following
Approx 2	ratio, including:	Year 8 and assesses whether	target bands:
weeks	 Simplifying ratios 	students have retained and can	Band A Green, Band B Orange, Band C Yellow, Band D Pink
	 Sharing in a ratio 	combine information.	

	 Converting units Proportion Best buys 	Students will receive detailed feedback, a PLC and will have opportunities to improve their learning in lessons.	Oak National Academy lessons and resources Ratio Proportion (Lessons 1-5) Unit 9 Links to aid revision A/B band Solving ratio problems C/D Band Equivalence and simplifying ratio Recommended Reading Women in Science: 50 Fearless Pioneers Who Changed the World – by Rachel Ignatowski
Approx 2 weeks	Unit 10 – Measures and mensuration 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: • Area and perimeter • Area and circumference of circles • Volume and surface area • Scale drawings and maps	Feedback throughout lessons and FAR marked homework.	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 Area of 2D shapes Circles (lessons 1-8) Volume and Surface area of prisms Unit 10 Links to aid revision A/B band Surface area and volume of prisms

			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: • 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

	Unit 12 – Statistics	Feedback throughout lessons	Optional homework tasks and Literacy resources
Approx 2	Recalling knowledge from the	and FAR marked homework.	Students can complete additional SPARX homework every time it is set on
weeks	beginning of year 7 this unit		the SPARX interface.
	allows students the		Module Instruction Sheets will be uploaded by teachers at the start of the
	opportunity to explore real		module on to Go4Schools. All of these can be accessed on the Digital
	life mathematical concepts		Learning Hub.
	and in particular allows them		These include videos, questions and answers linked to the module being
	to have practical experience		taught in lessons.
	of statistical experiments.		Module Instruction sheets are colour coded and represent the following
	Topics areas covered include:		target bands:
	 Averages from 		Band A Green, Band B Orange, Band C Yellow, Band D Pink
	ungrouped and		
	grouped data		Oak National Academy lessons and resources
	 Statistical diagrams 		<u>Univariate data</u> (Lessons 5-12)
			Bivariate data (lessons 3 and 4)
			Unit 12 Links to aid revision
			A/B band
			Averages from grouped frequency
			<u>Pie charts</u>
			C/D Band
			Mean median mode and range
			Averages from a frequency table