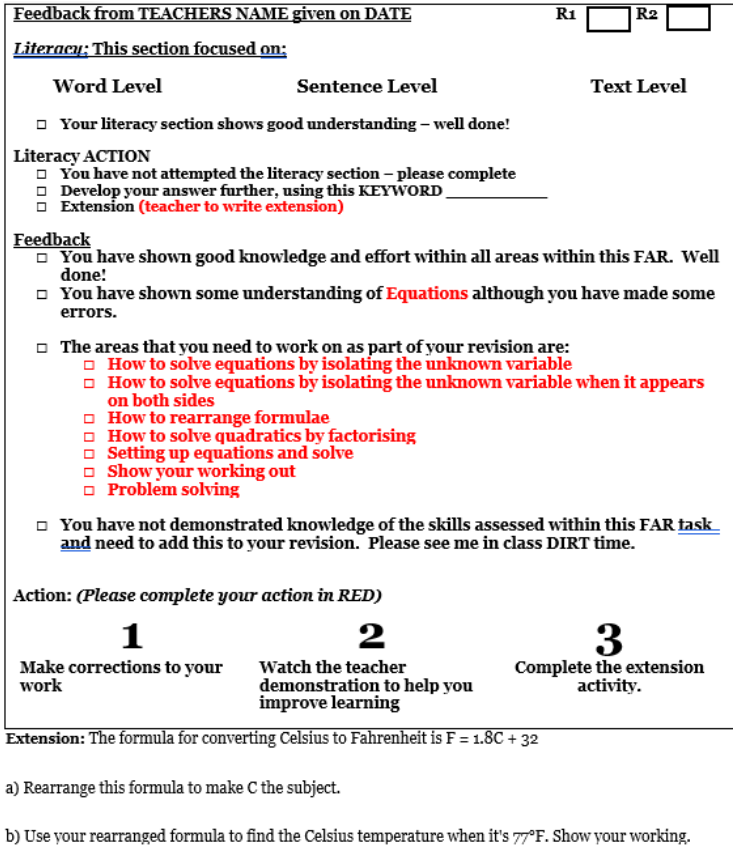
Year 7 Curriculum Overview

Rationale: The Year 7 curriculum is designed to extend student's knowledge from Key Stage 2, introducing new concepts in algebra, number, shapes, geometry and measure, probability, statistics, ratio, and proportion, building the students experiences of problem solving. 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. Approx 4 weeks	**Unit 1 – Transition unit and baseline.** Students are given the opportunity to explore some areas of real-life mathematics, including coding and working with shapes where the final output is building a 3D town. Students are taught in ability sets from unit 2 onwards.	**Baseline Assessment** covering the KS2 curriculum used to assessed pupils against their KS2 scaled SATs score and assist in the setting of ability groups. *FAR task will be marked by the teacher where feedback will be provided, an action will be given for students to improve.*	**Homework is set weekly in Maths in Year 7.** **Students arrive in mixed ability classes and are then set by ability into 5 maths sets after approximately 5 weeks of the Autumn term.** One **FAR (Feedback, Action, Response)** task to be set every 3 weeks. FAR tasks all follow the same format as seen below:



Feedback from TEACHERS NAME given on DATE R1 ☐ R2 ☐

Literacy: **This section focused on:**

Word Level **Sentence Level** **Text Level**

- ☐ **Your literacy section shows good understanding – well done!**

Literacy ACTION
- ☐ **You have not attempted the literacy section – please complete**
- ☐ **Develop your answer further, using this KEYWORD _____**
- ☐ **Extension (teacher to write extension)**

Feedback
- ☐ **You have shown good knowledge and effort within all areas within this FAR. Well done!**
- ☐ **You have shown some understanding of Equations although you have made some errors.**
- ☐ **The areas that you need to work on as part of your revision are:**
  - ☐ **How to solve equations by isolating the unknown variable**
  - ☐ **How to solve equations by isolating the unknown variable when it appears on both sides**
  - ☐ **How to rearrange formulae**
  - ☐ **How to solve quadratics by factorising**
  - ☐ **Setting up equations and solve**
  - ☐ **Show your working out**
  - ☐ **Problem solving**
- ☐ **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.**

Action: ***(Please complete your action in RED)***

1	2	3
Make corrections to your work	**Watch the teacher demonstration to help you improve learning**	**Complete the extension activity.**

Extension: The formula for converting Celsius to Fahrenheit is $F = 1.8C + 32$

a) Rearrange this formula to make C the subject.

b) Use your rearranged formula to find the Celsius temperature when it's 77°F. Show your working.

			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 Orange, Band B Yellow, Band C Pink, Band D Blue
Approx 3 weeks	**Unit 2 – Types of number and power** – Students begin by looking at the building blocks of mathematics, types of number. • Multiples, factors and primes • Highest common factor, lowest common multiple and prime factors • Operations with negative numbers	Feedback throughout lessons and FAR task.	**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 Orange, Band B Yellow, Band C Pink, Band D Blue **Unit 2: Links to aid revision** **A/B band** Factors, Multiples and Primes **C/D Band** Positive and Negative numbers

	• Squares, cubes and roots • Laws of indices These skills are often revisited in later modules.		**Oak National Academy lessons and resources** Factors and Multiples, Positive and Negative Numbers, Prime Factor Decomposition
Approx 3 weeks	**Unit 3 – Expressions** We move onto more abstract mathematics. Algebra can and will be used in a variety of ways for their maths exam and students must know how to effectively manipulate and use it effectively, including: • Substituting into expressions • Collecting like terms • Writing expressions from words • Expanding and factorising	Feedback throughout lessons and FAR task. **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 Orange, Band B Yellow, Band C Pink, Band D Blue **Unit 3: Links to aid revision** **A/B band** Factors, Multiples and Primes **C/D Band** Simplifying terms **Oak National Academy lessons and resources** Expressions, Equations and Inequalities (lessons 1-4 only) **Recommended Reading** The Number Devil – A Mathematical Adventure by Hans Magnus Enzenberger **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.
Approx 3 weeks	**Unit 4 – 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 task.	**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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Accuracy and Estimation (lessons 1,3 and 4) Order of operations (lesson 1 and 2) **Unit 4 - Links to aid revision** **A/B band** Place value and ordering decimals **C/D Band** Use of BIDMAS

Spring 7 lessons a fortnight for approximately 12 weeks Approx 3 weeks	**Unit 5 – Fractions and Percentages** Students are now able to broaden their knowledge from module 3 to incorporate fractions and percentages, including: • Operations with fractions • Fractions and percentage of an amount • Percentage increase and decrease and simple interest	Feedback throughout lessons and FAR task. **Units 4-5 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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Conceptualising and Comparing Fractions Manipulating and Calculating with Fractions Percentages (lessons 4,5,7 and 8) **Unit 5 - Links to aid revision** **A/B band** Calculating percentages How to add fractions **C/D Band** What are fractions? How to order fractions **Recommended Reading** Snowflake Seashell Star by Alex Bellos

Approx 3 weeks	**Unit 6 – Equations** Returning to abstract mathematics we build on our prior knowledge from units 2 and 6 to look at solving equations using for example: • Linear equations • Rearranging formula	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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Forming and Solving Equations **Unit 8 - Links to aid revision** **A/B band** Solving equations with x on both sides **C/D Band** One step and two step equations
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	Feedback throughout lessons and FAR task. **Units 6-7 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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Accuracy and Estimation (lessons 2 and 8)

	Calculator problem solving		**Unit 7 - Links to aid revision** **A/B band** Using significant figures **C/D Band** Rounding **Recommended Reading** Sherlock Bones and the Case of the Crown Jewels – Tim Collins
Summer 7 lessons a fortnight for approximately 14 weeks Approx 3 weeks	**Unit 8 – 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 task.	**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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Linear Graphs (lessons 1,2,5 and 6) **Unit 6 - Links to aid revision** **A/B band** Straight line graphs **C/D Band** Coordinates
Approx 3 weeks	**Unit 9 – Ratio and proportion** Building on our prior knowledge from unit 5 we look at how proportional	Feedback throughout lessons and FAR task. **End of Year Maths Assessment** This is a summative assessment of all topics learnt throughout	**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.

	relationships work and link to ratio, including: • Simplifying ratios • Sharing in a ratio • Converting units • Proportion • Best buys	Year 7 and assesses whether students have retained and can combine information. Students will receive detailed feedback, a PLC and will have opportunities to improve their learning in lessons.	Module Instruction sheets are colour coded and represent the following target bands: Band A Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Ratio **Unit 9 - Links to aid revision** **A/B band** Direct proportion **C/D Band** Introducing ratio **Recommended Reading** Women in Science: 50 Fearless Pioneers Who Changed the World – by Rachel Ignatowski
Approx 2 weeks	**Unit 10 – Properties of shape** Students now have the opportunity to develop their geometric reasoning by exploring shape and space, including: • Line and rotational symmetry • Transformations of shapes • 3D shapes and their properties	Feedback throughout lessons and FAR task.	**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 Orange, Band B Yellow, Band C Pink, Band D Blue **Oak National Academy lessons and resources** Transforming 2D Figures **Unit 10 - Links to aid revision** **A/B band**

	• Congruency		Transformations **C/D Band** Symmetry
Approx 2 weeks	**Unit 11 – Statistics** An opportunity for students to explore some areas of real-life mathematics, including conducting experiments and comparing data for their groups. This module is taught in mixed ability groups and covers the following areas: • Averages and range • Comparing averages • Scatter graphs • Line graphs • Bar charts	Feedback throughout lessons and FAR task.	**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 Orange, Band B Yellow, Band C Pink, Band D Blue **Unit 1 BBC Bitesize links to aid revision.** **A/B band** Two way tables **C/D Band** Bar Charts **Oak National Academy lessons and resources** Univariate data – **(lessons 5 – 12)**