

Medium Term Planning Document: Maths Year 7

Maths Curriculum Intent:

The Northampton Academy curriculum enables all of our students to thrive and to enjoy learning mathematics. When students start in year 7, we ensure they have the building blocks needed to successfully access and succeed in the secondary curriculum. We prioritise developing students' proficiency in number, geometry and algebra. Topics are regularly revisited and built upon throughout Key Stage 3, for example algebraic manipulation is taught in year 7 and then extended in years 8 and 9 through solving equations and further again when applied to angles problems which require students to create and solve equations.

Students develop an appreciation for the wider uses of mathematics. Not only are they exposed to concepts that they will apply in other subjects in school, but they will also develop the financial and literacy skills required to function successfully in the modern world. Students will be able to read and interpret statistics, they will consider the validity and reliability of the data and be able to question and form a logical argument based upon it. We also aim to show students the historical and cultural influences that maths has had on the world around them.

At Key Stage 4 we aim to add to the foundations that pupils have laid during KS3 by developing both their subject knowledge and the skills needed to solve complex, multi-faceted problems. For example, ratio is introduced in year 8 but revisited in year 10 where students are encouraged to apply this knowledge to increasingly difficult problems.

Students develop their confidence and resilience by being taught difficult concepts in depth, they experience a high volume of practise of these difficult concepts and embrace the fact that they will go wrong at times and will learn from their mistakes. At all points during their mathematics education, students are supported and encouraged to be resilient and independent learners who take responsibility for their education, for example through their revision and home learning. We aim to develop ambitious learners who want to study the subject at Key Stage 5 and beyond.

Students who choose to study Mathematics at a post 16 level have different options including Maths Studies, A Level Maths and A Level Further Maths. Whichever option is chosen, students will learn advanced skills and become increasingly independent mathematicians capable of applying their knowledge in increasingly complex and varied situations.

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The Medium Term Planning document below is designed to show the journey that every student takes through our curriculum. Some elements of the curriculum may be taught over several lessons, others in a single lesson.

Maths	Year 7 - Half Term 1		
Topic	Content	Formative Assessments?	
7.01 – Numerical Skills	Understand and use place value for decimals. Calculations with negative numbers. Estimate calculations by rounding.	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117384 https://curriculum.unitedlearning.org.uk/Pupil?r=117385 https://curriculum.unitedlearning.org.uk/Pupil?r=117386 https://curriculum.unitedlearning.org.uk/Pupil?r=117387 https://curriculum.unitedlearning.org.uk/Pupil?r=117388 https://curriculum.unitedlearning.org.uk/Pupil?r=117389 https://curriculum.unitedlearning.org.uk/Pupil?r=117390
	Key words: place value, integer, decimal, square number, square root, ascending, descending, round, estimate		
7.02 – Order of Operations	Solve calculations requiring understanding of B-I-DM-AS (know that the inverse of squaring is 'square rooting')	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117596 https://curriculum.unitedlearning.org.uk/Pupil?r=117597 https://curriculum.unitedlearning.org.uk/Pupil?r=117598 https://curriculum.unitedlearning.org.uk/Pupil?r=117599
	Key words: brackets, indices, roots, multiply, divide, add subtract		
7.03 – Basic Rules of Algebra	Introduce the concept of algebra, simplify expressions, manipulate expressions through simple one step rearranging, substitute positive and negative integers into expressions, solve simple one step equations. Substitute and solve.	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117600 https://curriculum.unitedlearning.org.uk/Pupil?r=117601 https://curriculum.unitedlearning.org.uk/Pupil?r=117602 https://curriculum.unitedlearning.org.uk/Pupil?r=117603 https://curriculum.unitedlearning.org.uk/Pupil?r=117604 https://curriculum.unitedlearning.org.uk/Pupil?r=117605
	Key words: Coefficient, expression, substitute, rearrange, variable, term, collect like terms		

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Maths	Year 7 – Half Term 2		
Topic	Content	Formative Assessments?	Link(s) to an example lesson
7.04 – Factors and Multiples	Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117568 https://curriculum.unitedlearning.org.uk/Pupil?r=117569 https://curriculum.unitedlearning.org.uk/Pupil?r=117570 https://curriculum.unitedlearning.org.uk/Pupil?r=117571 https://curriculum.unitedlearning.org.uk/Pupil?r=117572
	Key words: multiple, factor, prime, LCM, HCF, Venn diagram		
7.05 – Expand and Factorise	Simplify and manipulate algebraic expressions to maintain equivalence by multiplying a single term over a bracket or by taking out common factors	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117606 https://curriculum.unitedlearning.org.uk/Pupil?r=117607 https://curriculum.unitedlearning.org.uk/Pupil?r=117608 https://curriculum.unitedlearning.org.uk/Pupil?r=117609 https://curriculum.unitedlearning.org.uk/Pupil?r=117610 https://curriculum.unitedlearning.org.uk/Pupil?r=117611 https://curriculum.unitedlearning.org.uk/Pupil?r=117612 https://curriculum.unitedlearning.org.uk/Pupil?r=117613
	Key words: variable, term, expression, coefficient, multiply, expand, factorise		
7.06 – Addition and Subtraction	Use Addition and Subtraction, including formal written methods, applied to integers, decimals	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117391 https://curriculum.unitedlearning.org.uk/Pupil?r=117392 https://curriculum.unitedlearning.org.uk/Pupil?r=117393 https://curriculum.unitedlearning.org.uk/Pupil?r=117394
	Key words: Add, subtract, decimal, two way table		
7.07 – Perimeter	Calculate and solve problems involving perimeters of rectangles and compound shapes (not circles)	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117395 https://curriculum.unitedlearning.org.uk/Pupil?r=117396 https://curriculum.unitedlearning.org.uk/Pupil?r=117397 https://curriculum.unitedlearning.org.uk/Pupil?r=117398 https://curriculum.unitedlearning.org.uk/Pupil?r=117399 https://curriculum.unitedlearning.org.uk/Pupil?r=117400
	Key words: perimeter, length, width, parallel, regular, irregular		

Summative Assessment:

Pupil Mid-Year Assessments will take place at the end of half term 2. These will cover all content taught in the first 2 half terms. This assessment will inform pupil Rank Order in the subject.

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Maths			
Year 7 – Half Term 3			
Topic	Content	Formative Assessments?	Link(s) to an example lesson
7.08 – Averages	Describe, interpret and compare observed distributions of a single variable through appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117748 https://curriculum.unitedlearning.org.uk/Pupil?r=117749 https://curriculum.unitedlearning.org.uk/Pupil?r=117750 https://curriculum.unitedlearning.org.uk/Pupil?r=117751 https://curriculum.unitedlearning.org.uk/Pupil?r=117752 https://curriculum.unitedlearning.org.uk/Pupil?r=117753
7.09 – Multiplication and Division	Use Multiplication and Division, including formal written methods, applied to integers & decimals	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117557 https://curriculum.unitedlearning.org.uk/Pupil?r=117558 https://curriculum.unitedlearning.org.uk/Pupil?r=117559 https://curriculum.unitedlearning.org.uk/Pupil?r=117560 https://curriculum.unitedlearning.org.uk/Pupil?r=117561 https://curriculum.unitedlearning.org.uk/Pupil?r=117562 https://curriculum.unitedlearning.org.uk/Pupil?r=117563 https://curriculum.unitedlearning.org.uk/Pupil?r=117564 https://curriculum.unitedlearning.org.uk/Pupil?r=117565 https://curriculum.unitedlearning.org.uk/Pupil?r=117567
7.10 – Area of rectangles, parallelograms and triangles	Derive and apply formulae to calculate and solve problems involving area of triangles, rectangles and parallelograms	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117573

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Maths	Year 7 – Half Term 4		
Topic	Content	Formative Assessments?	Link(s) to an example lesson
7.11 – Fraction Manipulation	Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117583 https://curriculum.unitedlearning.org.uk/Pupil?r=117579 https://curriculum.unitedlearning.org.uk/Pupil?r=117580 https://curriculum.unitedlearning.org.uk/Pupil?r=117581 https://curriculum.unitedlearning.org.uk/Pupil?r=117582
7.12 – Adding and Subtracting Fractions	Use addition and subtraction, including formal written methods, applied to proper and improper fractions, and mixed numbers	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117584 https://curriculum.unitedlearning.org.uk/Pupil?r=117585 https://curriculum.unitedlearning.org.uk/Pupil?r=117586 https://curriculum.unitedlearning.org.uk/Pupil?r=117587 https://curriculum.unitedlearning.org.uk/Pupil?r=117588
7.13 – Comparing and Ordering Fractions	Compare and order fractions by creating common denominators	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117589 https://curriculum.unitedlearning.org.uk/Pupil?r=117590 https://curriculum.unitedlearning.org.uk/Pupil?r=117591 https://curriculum.unitedlearning.org.uk/Pupil?r=117592
7.14 – Fractions of Amounts	Interpret fractions as operators	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117593 https://curriculum.unitedlearning.org.uk/Pupil?r=117594 https://curriculum.unitedlearning.org.uk/Pupil?r=117595

Maths	Year 7 – Half Term 5
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Topic	Content	Formative Assessments?	Link(s) to an example lesson
7.15 – Polygons and Symmetry	Derive, describe and illustrate properties of triangles, quadrilaterals and other plane figures [for example, equal lengths and angles] using appropriate language and technologies	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117627 https://curriculum.unitedlearning.org.uk/Pupil?r=117628 https://curriculum.unitedlearning.org.uk/Pupil?r=117629 https://curriculum.unitedlearning.org.uk/Pupil?r=117630 https://curriculum.unitedlearning.org.uk/Pupil?r=117631 https://curriculum.unitedlearning.org.uk/Pupil?r=117632 https://curriculum.unitedlearning.org.uk/Pupil?r=117633 https://curriculum.unitedlearning.org.uk/Pupil?r=117634 https://curriculum.unitedlearning.org.uk/Pupil?r=117635 https://curriculum.unitedlearning.org.uk/Pupil?r=117636
7.16 – Angles	Apply the properties of angles at a point, angles at a point on a straight line, angles in polygons	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117620 https://curriculum.unitedlearning.org.uk/Pupil?r=117621 https://curriculum.unitedlearning.org.uk/Pupil?r=117622 https://curriculum.unitedlearning.org.uk/Pupil?r=117623 https://curriculum.unitedlearning.org.uk/Pupil?r=117624 https://curriculum.unitedlearning.org.uk/Pupil?r=117625 https://curriculum.unitedlearning.org.uk/Pupil?r=117626
7.17 – Coordinates	Read and plot coordinates in all 4 four quadrants	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	https://curriculum.unitedlearning.org.uk/Pupil?r=117637 https://curriculum.unitedlearning.org.uk/Pupil?r=117638 https://curriculum.unitedlearning.org.uk/Pupil?r=117639

Summative Assessment:

Pupil End of Year Assessments will take place at the start of half term 6. These will cover all content taught in the first 5 half terms. This assessment will inform pupil Rank Order in the subject. As well as the content listed below, there is an expectation that staff will work with pupils to improve knowledge in areas of weakness identified in the summative assessments. This may include in school and out of school intervention, and collaborative and independent study.

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Maths	Year 7 – Half Term 6		
Topic	Content	Formative Assessments?	Link(s) to an example lesson
7.18 – Time	Work with analogue and digit time to understand and interpret everyday situations.	Mini WB formative assessment in lessons Bell Work (starter booklet) Exam style questions	Calculations Involving Time Video – Corbettmaths Proportion Time Problems Video – Corbettmaths