

ALGEBRA: PROGRESSION MAP FOR FLUENCY, REASONING AND PROBLEM SOLVING**Algebra: Statutory Requirements and Reasoning (from NCETM)**

EQUATIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ (copied from Addition and Subtraction)	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems . (copied from Addition and Subtraction)	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)		use the properties of rectangles to deduce related facts and find missing lengths and angles (copied from Geometry: Properties of Shapes)	express missing number problems algebraically
		solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)			
	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)				find pairs of numbers that satisfy number sentences involving two unknowns
represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)					enumerate all possibilities of combinations of two variables
Connected Calculations $11 = 3 + 8$ $12 = 4 + 8$	Connected Calculations	Connected Calculations	Connected Calculations Put the numbers 7, 2, 8, 0, 9 in the boxes to make	Connected Calculations The number sentence below represents the angles in	Connected Calculations p and q each stand for whole numbers.

<p>13 = <input type="text"/> + 8 14 = <input type="text"/> + 8</p> <p>What numbers go in the boxes? Can you continue this sequence of calculations?</p>	<p>Put the numbers 19, 15 and 4 in the boxes to make the number sentences correct.</p> <p><input type="text"/> = <input type="text"/> - <input type="text"/> <input type="text"/> = <input type="text"/> + <input type="text"/></p>	<p>Put the numbers 3, 12, 36 in the boxes to make the number sentences correct.</p> <p><input type="text"/> = <input type="text"/> × <input type="text"/> <input type="text"/> = <input type="text"/> ÷ <input type="text"/></p>	<p>the number sentences correct.</p> <p><input type="text"/> = <input type="text"/> × <input type="text"/> <input type="text"/> = <input type="text"/> ÷ <input type="text"/></p>	<p>degrees of an isosceles triangle. $A + B + C = 180$ degrees A and B are equal and are multiples of 5. Give an example of what the 3 angles could be. Write down 3 more examples</p>	<p>$p + q = 1000$ and p is 150 greater than q. Work out the values of p and q.</p>
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FORMULAE							
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		
			Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit. (Copied from NSG measurement)		use simple formulae		
			Undoing If the longer length of a rectangle is 13cm and the perimeter is 36cm, what is the length of the shorter side? Explain how you got your answer.	Undoing The perimeter of a rectangular garden is between 40 and 50 metres. What could the dimensions of the garden be?	Undoing The diagram below represents two rectangular fields that are next to each other. <table border="1" data-bbox="1789 1139 2002 1230"> <tr> <td>Field A</td> <td>Field B</td> </tr> </table> Field A is twice as long as field B but their widths are the same and are 7.6 metres.	Field A	Field B
Field A	Field B						

					<p>If the perimeter of the small field is 23m what is the perimeter of the entire shape containing both fields?</p> <p>If y stands for a number complete the table below</p> <table border="1"> <tr> <td>y</td> <td>$3y$</td> <td>$3y + 1$</td> </tr> <tr> <td>25</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>28</td> </tr> </table> <p>What is the largest value of y if the greatest number in the table was 163?</p>	y	$3y$	$3y + 1$	25					28
y	$3y$	$3y + 1$												
25														
		28												

SEQUENCES					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)	compare and sequence intervals of time (copied from Measurement) order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction)				generate and describe linear number sequences
	True or false? Explain The largest three digit number that can be made from the digits 2, 4 and 6 is 264. Is this true or false? Explain your thinking.				Generalising Write a formula for the 10 th , 100 th and n th terms of the sequences below. 4, 8, 12, 16 0.4, 0.8, 1.2, 1.6,

Algebra: Key Performance Indicators

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically

Algebra: Cross-curricular links

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Algebra: Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					formula formulae equation unknown variable