

	National Curriculum Statement	All students																	
		Fluency	Reasoning	Problem Solving															
Algebra	<p>Generate and describe linear number sequences.</p>	<ul style="list-style-type: none"> Fill in the first two terms in this sequence. ____, _____, 55, 63, 71 Can you write a formula to describe the sequence? 7 is the first term in this sequence. What is the 7th term? 7, 12, 17, The formula $4n+1$ can be used to generate the numbers in this sequence. Fill in the table below: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Term</th> <th>Calculation</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>1st</td> <td>$4 \times 1 + 1$</td> <td>5</td> </tr> <tr> <td>5th</td> <td></td> <td></td> </tr> <tr> <td>10th</td> <td></td> <td>41</td> </tr> <tr> <td>20th</td> <td>$4 \times 20 + 1$</td> <td></td> </tr> </tbody> </table>	Term	Calculation	Value	1 st	$4 \times 1 + 1$	5	5 th			10 th		41	20 th	$4 \times 20 + 1$		<ul style="list-style-type: none"> Write a formula for the 10th, 100th and nth terms of the sequences below. 4, 8, 12, 16 0.4, 0.8, 1.2, 1.6, Here is a sequence: 3, 8, 13, 18, 23 Circle the formula that describes the sequence. <div style="text-align: center; margin: 5px 0;"> <div style="background-color: #4a7ebb; color: white; padding: 5px; border-radius: 10px; display: inline-block;">4n - 1</div> <div style="background-color: #6a3d9a; color: white; padding: 5px; border-radius: 10px; display: inline-block;">5n - 2</div> <div style="background-color: #00a0c0; color: white; padding: 5px; border-radius: 10px; display: inline-block;">3n + 5</div> </div> <p>Explain your reasoning.</p>	<ul style="list-style-type: none"> Write three sequences where the rule to find the next term is 'add 3' 1) 2) 3) Write two different linear sequences where the second number is 5 1) 2) Ramesh is exploring three sequence-generating rules. Rule A is: 'Start at 30, and then add on 7, and another 7, and another 7, and so on.' Rule B is: 'Write out the numbers that are in the seven times table, and then add 2 to each number.' Rule C is: 'Start at 51, and then add on 4, and another 4, and another 4, and so on.' What's the same and what's different about the sequences generated by these three rules? Explain why any common patterns occur.
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Fractions	Generate and describe linear number sequences (with fractions)	<ul style="list-style-type: none"> A rule for a sequence is -6. It starts at 49. What term would be the first negative number? Work out the missing fractions in the sequence below. $\frac{5}{7}, \dots, 1, \frac{\quad}{7}, -\frac{4}{7}$ Complete a sequence using a diagram e.g. 	<ul style="list-style-type: none"> Here is the start of a sequence: 1, 2, 4 ... Katie says the next term is 7 but Dan says the next term is 8. They could both be right. Explain why. A sequence starts: 7, 12, 17, 22, 27. Could 724 be in the sequence? Explain how you know. Abdul says "My rule is -50×2 if I start at 162, I will never get a negative number even though I am subtracting." Is he correct? Explain why. 	<ul style="list-style-type: none"> In a group of 4, each think of a digit between 1- 100 and write it on a post it note. Share them with the group. Can we create a sequence and a rule? Give pairs a rule e.g. $x3 - 1$. Taking turns, each child picks a number from the grid and works out the first 5 terms. If they are correct they can place a counter over that number. The first to get three in a row wins. 																						
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