

Stage 9 – Algebra: Pattern sniffing



Know it!

Knowledge	
I know...	How to recognise and use the Fibonacci sequence
I know...	How to generate Fibonacci type sequences
I know...	How to generate terms of a quadratic sequence from a written rule
I know...	How to find the next terms of a quadratic sequence using first and second differences
I know...	How to generate terms of a quadratic sequence from its nth term



Link it!

Backward	Forward
Nth term for linear sequences Substitution in quadratic expressions.	Nth term for quadratic sequences. Plot quadratic sequences



Prove it!

A sequence has the first two terms 1, 2, ... Show me a way to continue this sequence. And another. And another ...

A sequence has nth term $3n^2 + 2n - 4$. Jenny writes down the first three terms as 1, 12, 29. Kenny writes down the first three terms as 1, 36, 83. Who do agree with? Why? What mistake has been made?



Say it!

Vocabulary	Definition
Term-to-term rule	The rule that tells you how to get from one term to the next.
Position-to-term rule	A rule that defines the value of each term in a sequence with regard to its position
nth term	The algebraic expression to describe the position to term rule
Linear (sequence)	When a sequence increases or decreases by the same amount each time.
Quadratic (sequence)	A quadratic sequence is a sequence of the square numbers
First and second difference	The difference in a sequence is the numerical gap between two terms.
Fibonacci sequence	A sequence of numbers starting 0,1 and then the next term is generated by adding the two previous numbers.

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