

**ZMATH 2014b.00694**

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**Exploring the Fibonacci sequence of order three.**

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Summary: The Fibonacci sequence of order three is the sequence of numbers 1, 3, 10, 33, 109, ... Each term in this sequence from the third term on is equal to three times the previous term plus the term two places before it. This article will explore ideas such as divisibility and periodicity as well as prime elements in this sequence. We conclude by furnishing a closed formula similar to the Binet formula for the Fibonacci sequence in addition to some palatable number tricks.

*Classification:* I30 F60

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