Fibonacci's Math

Activity 1 - Amazing Fibonacci Numbers

Fibonacci was better known in his time as Leonardo of Pisa. Fibonacci was his nickname, which actually was short for the Son of Bonacci. Fibonacci lived in Pisa, Italy from 1170 to 1250. He was one of the greatest European mathematicians of the Middle Ages. Fibonacci travelled to North Africa and other countries around the world to study mathematics. Many of Fibonacci's discoveries are still valuable to mathematics, but he is most famous for his Fibonacci Sequence, a special number pattern which you are about to discover.The citizens of Pisa built a statue in Fibonacci's honour. It still stands there today.

Fibonacci Numbers

The Fibonacci Sequence starts out like this:

1, 1, 2, 3, 5, 8, 13, 21...

Activity Questions:

1. Can you see what the special pattern is here? Describe it.
2. What are the next 5 numbers in the sequence?
3. How did you figure it out?
4. Can you come up with a general way to find Fibonacci numbers? What is the rule or the formula for generating Fibonacci numbers?

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Why are Fibonacci Numbers Special?

You will find it hard to believe but Fibonacci numbers occur virtually everywhere in nature:

- rabbit population
- tree branches
- bee hives
- leaves and petals of plants
- pinecones
- sunflowers
- pineapples
- turtles
- spiral sea shells

For example, the number of petals of many plants turns out to be a Fibonacci number:

A White Calla Lily has **1** petal

A Crown of Thorns has **2** petals

An Iris has **3** petals

A Buttercup has **5** petals

A Delphinium has **8** petals

A Cineraria has **13** petals

...and so on

The numbers above occur in flowers ***most*** of the time, but ***not every time.***

This is why four leaf clovers are so rare. Four is not a Fibonacci Number!

Can you believe THIS is math?

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Solution:

1. Pattern: Each number in the Fibonacci sequence is equal to the two previous numbers in the sequence (e.g. 8 = 5 + 3)
2. Next five numbers: 34, 55, 89, 144, 233