Fibonacci Art

Did you know Fibonacci Day is on November 23 every year? But who was Fibonacci and why were they important? What we know as the Fibonacci Sequence (found below), existed long before Leonardo Fibonacci introduced it to the European world. Learn more about it through this activity!

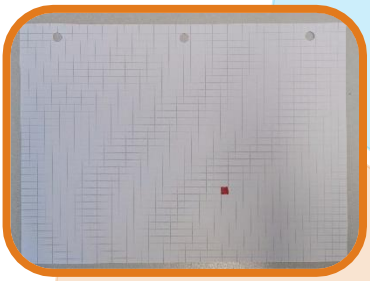
1 1 2 3 5 8 13 21 34 55 89 144 233 377 . . .

Materials:
- Graph Paper
- Coloring Supplies
- Pencil

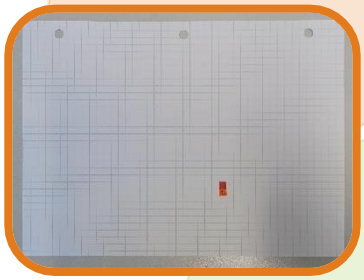
Optional Materials:
- More Graph Paper
- Tape

Procedure:

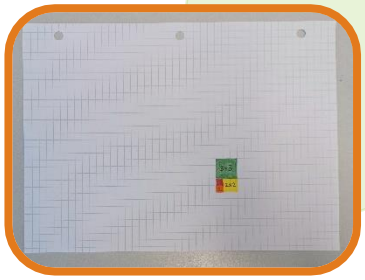
1. You will start the sequence in the bottom right quadrant of your graph paper by filling in 1 square.



2. The next number in the sequence is also 1. Fill in another box just below your first box.



3. The next number in the sequence is 2. Fill in a 2x2 square to the right of the 1s. ***Tip:*** *The next square should always share a side with some of the previous squares. To make sure you are on the correct side, the length of the previous squares' sides should add up to the length of the new square's side. (1+1=2, 1+2=3, 2+3=5, etc).*



4. Continue the sequence until your whole paper is full. If you would like to keep going, you can tape more graph paper together and keep coloring.

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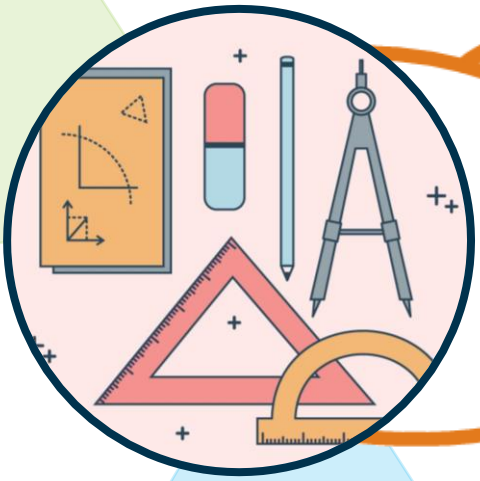
5. Once you have filled in all the squares you want, use a pencil and draw a straight line from corner to corner on each box. You should start with the very first box you filled in and draw the line from the top right corner to the bottom left corner. Your next line should start where the previous line ended. It should begin to resemble a spiral.

6. After you draw your straight lines, you can use them as a guide to make a spiral with a black or other dark colored marker.

What's happening? 1.618 is known as the golden ratio, golden mean, or phi. The numbers in the Fibonacci sequence demonstrate this ratio really well. If you take one of the numbers in the sequence and divide it by the previous number, the result will come out close to 1.6 each time.

However, Leonardo Fibonacci was not the first to discover this ratio or sequence of numbers. While Fibonacci was in North Africa studying, his teacher shared the sequence with him which originated from a mathematician in India between 200 – 300 BC (between 2321 – 2221 years ago!). Although both the ratio and sequence existed for long periods of time before, they were not connected until the 1600s.



DID YOU KNOW?

A **mathematician** is someone who studies math! They study everything about math, including theories and real-life application. If you liked exploring this activity, maybe math is for you!