

## Creating a Fibonacci Sequence

A Fibonacci sequence is a list of numbers where each new number is the sum of the two that comes before it. The first two numbers in the Fibonacci sequence are 0 and 1. The sequence then follows the pattern below:

0, 1, 1, 2, 3, 5, 8, 13...

We can see that the third number in the sequence is 1. This is because it is the sum of the two numbers which came before it ( $0+1 = 1$ ). The fourth number in the sequence is 2 based on this same logic ( $1+1 = 2$ ). This sequence continues following this same pattern over and over again. This repetition in pattern is known as recursion.

Fibonacci sequences are quite interesting because they can be used to represent patterns actually seen in nature. Things such as seashells, tree branches expanding, flowers, pinecones, etc demonstrate fibonacci sequences. This is seen in the spiral patterning of things such as seashells, flowers, and pinecones. In tree branches we can see the fibonacci sequence as each branch splits into more and more branches.

In this activity students will focus specifically on the spiral shapes found in nature. They will complete the beginning part of the sequence ultimately leading them to drawing a spiral shape that directly follows along with the pattern. They will do so on graph paper that is provided on the pdf attachment. The activity will serve to increase their understanding of fibonacci sequences and how they occur in nature, but also, give the students an engaging way of learning at the same time.

After the teacher initially explains fibonacci sequences and how they work, the students are ready to begin the worksheet. An answer key is also provided for the teacher to reference while students are working.