PFS 25-2 (3rd Grade) 9/26/11 _____

# Fibonacci Trees

Way back in 1202, a man named Leonardo of Pisa published a book in Latin. It was called *Liber Abaci*, which means *The Book of Calculating.* Leonardo is better known by the name Fibonacci.

Fibonacci's father was an Italian merchant who spent time working in north Africa. Fibonacci got to travel around the Mediterranean to many lands where people spoke Arabic and used the number system we use today. (We call it Hindu-Arabic numerals.) He recognized that it was a better system than the Roman numerals used in Europe, and in *Liber Abaci* he introduced this number system to Europe.

In his book Fibonacci also posed a problem about rabbits. If you solved the problem, you would find these numbers:

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

This sequence of numbers is now called the Fibonacci sequence. Fibonacci did not invent this sequence; it was known to mathematicians in India as early as the 6th century. But Fibonacci's book helped create interest in this sequence.

You can find the Fibonacci numbers in nature: in sunflowers, in pineapples, in the petals of some flowers. In our activity we'll try to model the branching of a tree using the Fibonacci numbers.

Lightly draw horizontal lines one inch apart on your drawing paper. Number the spaces you create with the Fibonacci numbers, starting from the bottom. Now begin to draw a tree at the bottom. Show just the trunk of the tree in the first two spaces; that's the 1, 1 of the sequence. In the next space let the trunk branch so you have 2. Then in the space above that, let one part branch again, so the tree has 3 parts in this space. Next let two parts branch so there are five branches in the next level. See how far you can go! Can you make a realistic-looking tree following this rule?

Can you learn more about the Fibonacci sequence?

Have fun!