Objective

By the end of this lesson, Leen will understand the concept of the Fibonacci sequence, recognize its patterns in nature and art, and be able to create a visual representation of the sequence using simple drawing techniques.

Materials and Prep

- Paper
- Pencil or pen
- Colored pencils or markers (optional)
- Ruler (optional)

Before the lesson, it would be helpful to familiarize yourself with the Fibonacci sequence and its significance in nature, art, and mathematics. Make sure to have a quiet space ready for drawing and discussion.

Activities

- **Introduction to Fibonacci**

  Start by explaining the Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, etc. Each number is the sum of the two preceding ones. Discuss how this pattern appears in nature, such as in the arrangement of leaves, flowers, and even in the spirals of shells.

- **Fibonacci Drawing Challenge**

  Leen will create a visual representation of the Fibonacci sequence. Using a pencil and ruler, draw squares whose sides are the Fibonacci numbers. Then, connect the corners to create a spiral. This will help visualize the growth pattern!

- **Fibonacci in Nature Scavenger Hunt**

  Take a walk outside (or look through pictures if indoors) and identify examples of the Fibonacci sequence in nature. This could include flowers, pine cones, or even fruits like pineapples. Leen can take notes or sketch what she finds!

- **Creative Art Project**

  Using the colored pencils or markers, Leen can create an artistic piece inspired by the Fibonacci sequence. This could be a pattern or a scene that incorporates the Fibonacci numbers and spirals.

Talking Points

- "Did you know that the Fibonacci sequence starts with 0 and 1? After that, each number is the sum of the two before it!"
- "Fibonacci numbers can be found all around us, like in the petals of flowers or the arrangement of seeds in a sunflower!"
- "When we draw the Fibonacci spiral, we can see how nature grows in a way that's both beautiful and mathematical!"
- "Why do you think artists and architects use the Fibonacci sequence in their work? It creates a sense of harmony!"
- "Let’s think about how we can find Fibonacci patterns in our everyday lives. Can you think of

anything?"
- "The Fibonacci sequence is not just about numbers; it’s about patterns and how they appear in the world!"
- "How do you feel when you see something that follows this pattern? Does it look cool or interesting to you?"
- "What do you think would happen if we didn’t have patterns like Fibonacci in nature? Would things look different?"
- "Let’s consider how we can use Fibonacci in our own art. How can we create something unique with it?"
- "Remember, math isn’t just about numbers; it’s about understanding the world around us!"
- "How can we use our knowledge about Fibonacci to create something new and exciting?"
- "Can you think of other sequences or patterns that might be similar to Fibonacci? Let’s explore them!"