The Fibonacci Sequence
Lesson Plan

Grade Level: 9-12 | **Curriculum Focus:** Algebra, Geometry | **Lesson Duration:** Two class periods

Student Objectives

- Understand the Fibonacci sequence (numerically, algebraically, and geometrically).
- Understand how the Fibonacci sequence is expressed in nature.

Materials

- Discovery School video on *unitedstreaming*: *Patterns, Symmetry, and Beauty*
  Search for this video by using the video title (or a portion of it) as the keyword.

  Selected clips that support this lesson plan:

  - The Fibonacci Sequence in Nature

- Copies of the Creating the Fibonacci Spiral handout
- Computers with Internet access (optional but very helpful)

Procedures

1. Begin by discussing the Fibonacci sequence, which was first observed by the Italian mathematician Leonardo Fibonacci in 1202. He was investigating how fast rabbits could breed under ideal circumstances. He made the following assumptions:
   - Begin with one male and one female rabbit. Rabbits can mate at the age of one month, so by the end of the second month, each female can produce another pair of rabbits.
   - The rabbits never die.
   - The female produces one male and one female every month.
2. Work with the class to see if students can develop the sequence themselves. Remind them that they're counting pairs of rabbits (the number in parentheses), not individuals. Walk them through the first few months of the problem:
   (1.) Begin with one pair of rabbits. (1)
   (2.) At the end of the first month, still only one pair exists. (1)