Bulletin Board: **Spiral by Squares**

Research Fibonacci numbers. You will need poster paper, a compass, and a ruler to construct a spiral.

Begin the construction by making a square of one unit on your poster paper. The size of the next square is from the Fibonacci number series: 1, 1, 2, 3, 5, 8, 13, 21… Use a compass to draw the quarter-circle arcs. Construct a minimum of 12 squares.

Following steps one to five construct an equiangular spiral:

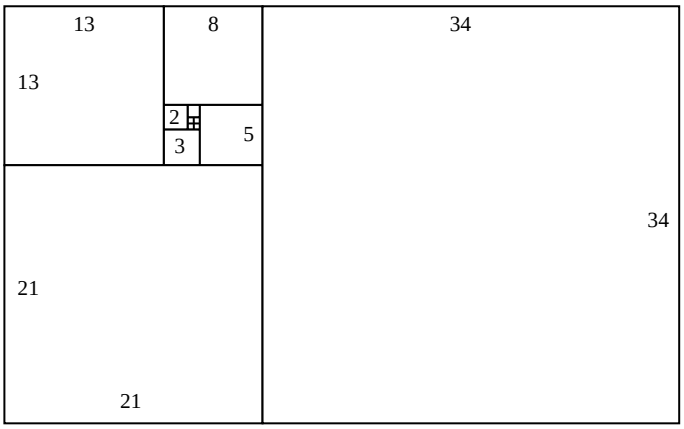
1. Begin with a one-unit square:

2. Attach another one-unit square to the top:

3. Attach a two-unit square to the left:

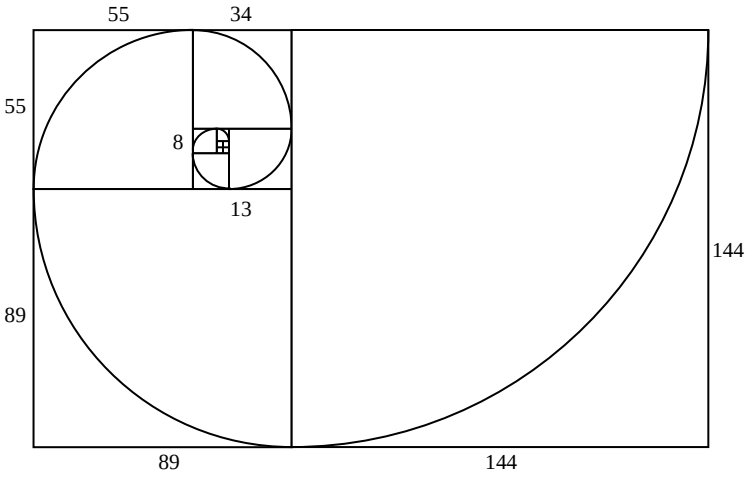
4. Attach a three-unit square to the bottom:

5. Attach squares of 5, 8, 13, 21, and 34 units in like fashion.



Construction could, of course, continue as far as space permitted, with squares of the needed dimension being added successively. When you have finished constructing the squares, draw quarter-circle arcs connecting opposite corners of the squares. Use the sides as the radii of the arcs so that the arcs connect sequentially.

What develops is a beautiful spiral, known variously as an equiangular or logarithmic spiral. Visually it can be described as a long, slow spiral. It is quite different from a more evenly spaced spiral, known as an Archimedian spiral. The building blocks of this particular spiral are squares whose dimensions are successive terms in the Fibonacci sequence. It is called an equiangular spiral because all radii from its center intersect the spiral itself at exactly the same angle.



Display your poster on the bulletin board with a written paper explaining how you constructed your spiral.

Extension: *Research more activities of this type and make an attractive poster illustrating these activities. One good source for research is the book, "Fascinating Fibonacci" by Garland. Dale Seymour Publications.*