Creating the Fibonacci Spiral

You will need a large piece of grid paper, a ruler, and a compass to create the Fibonacci spiral. Follow the directions below and watch the spiral emerge.

1. Draw a small square that is 1 cm on each side. Draw a second square of the same size directly to the left of the first square so that the sides of the two squares are touching.

2. Draw a 2-cm square just above the two 1-cm squares.

3. Draw a 3-cm square to the right of the three smaller squares so that it borders the two 1-cm squares and the 2-cm square. All the squares should be connected.

4. Draw a 5-cm square that borders the 1-, 2-, and 3-cm squares (below the smaller squares). Each successive square will have an edge whose length is the sum of those of the two squares immediately preceding it.

5. Draw an 8-cm square to the left of the previous five squares.

6. Draw a 13-cm square above the previous six squares.

7. You will need your compass to complete your drawing. Within each square of your drawing, you are going to draw an arc, or a quarter circle, from one corner to the opposite corner. (You will be drawing an arc of a circle with a radius equal to the length of one side of that square.) Each arc will be connected to the next.

8. To begin, place your pencil in the upper-right-hand corner of the FIRST 1-cm square you drew and draw an arc downward to its lower-left-hand corner. Next, draw an arc from that same point on the SECOND 1-cm square (the lower-right-hand corner) to the upper-left-hand corner of the second square. Continue drawing arcs in each square you created, starting each arc at the point where the last one ended.

9. What shape did you get? What forms in nature reflect this shape?