

Golden Rectangle Construction

Start by constructing a square as described below:

1. Place your blank, unlined paper in landscape orientation.
 - Measure a 45° angle from the top left corner of your paper
 - Use a ruler to draw a 22 cm line from nearly the top left of your corner toward the center of the paper, using the 45° angle mark as a guide.
2. Bisect the line using a compass
3. Set your compass point on the intersection of the two lines and measure to the end of the segment in the top left corner. Make a circle (some of it will go off the page). The original 22 cm segment and the bisector form the diagonals of your square.
4. Mark each intersection of your circle with the two 22 cm lines. Connect the points to form a square. You should now have a square with 22cm length diagonals.

Creating the Rectangle

5. Bisect the top and bottom sides of the square to mark the midpoint of each
6. Extend the top and bottom sides of your square to the right
7. Set your compass from the midpoint of the bottom side of the square to the top right corner of your square
 - Create an arc that extends until it hits the bottom line you extended from your square.
8. Repeat step 7 setting your compass from the midpoint of the top of the square to the bottom right corner of the square.
 - Create an arc that extends until it hits the top line you extended from your square.

9. Connect the two points from steps 7 and 8 on the extended lines to form a rectangle (this is a vertical line that makes the right edge of the rectangle)
10. Use your compass to mark off a square in the bottom right corner of your rectangle
11. Repeat the process of marking off squares in a spiral in toward the center of your largest rectangle until you can no longer make squares
 - You should have at least 7 squares within your largest rectangle to get full points

Make the Spiral

12. Use your compass to draw in the spiral
 - Start with the largest square. Set your compass to one side length. Make your arc across that square
 - Reset your compass to the side length of the next square. Make an arc through that square
 - Repeat this process for the remaining squares

All of your arcs should connect smoothly to form the spiral