Golden Spirals

ACTIVITY

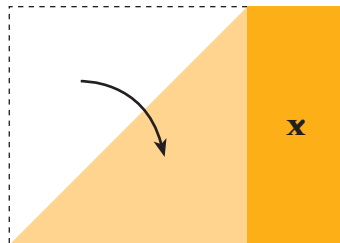You need: A4 paper, scissors, a ruler, a compass, a computer (optional)

1. Draw a rectangle that is 26 centimetres by 16 centimetres. This is (almost) a golden rectangle. Construct a golden spiral by following the diagrams on the right and the instructions below.

   For each quarter arc, you are working with a golden rectangle that is smaller than the one before it.
   - Set your compass radius to the width of your rectangle.
   - Put its point on the corner marked with a hollow dot and mark off a radius on the long side of the rectangle.
   - Use the compass to mark off an identical length on the other long side of the rectangle. (This will give the position of the solid dot.)
   - Using the solid dot as centre, draw a quarter arc.
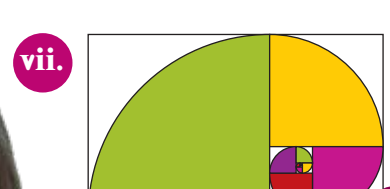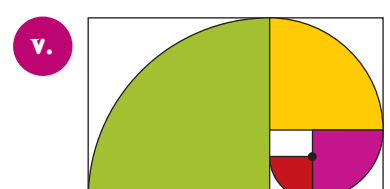   - Rule a line to mark off the part of the rectangle that contains the arc.
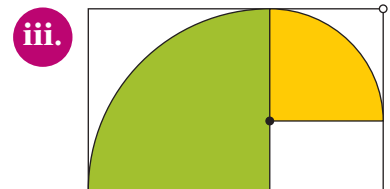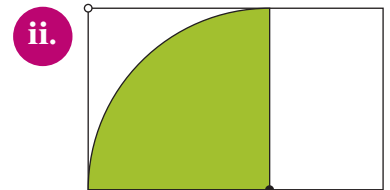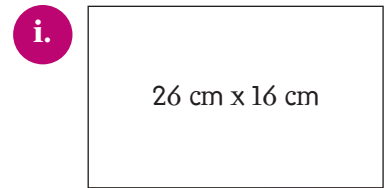
   Repeat these steps as many times as you can.

2. Cut a golden rectangle from a sheet of A4 paper.

   - Fold down a corner as in the diagram.
   - Cut off the leftover rectangle marked **x** and keep the square. Fold and cut another square from the leftover rectangle.
   - Repeat this process as many times as you can.

   Line up the squares from biggest to smallest.
   Describe any patterns you can see.

INVESTIGATION

Use the Internet or the library to investigate the golden spiral in nature. For example, you could look at a fern frond, a sunflower, a pine cone, or a cauliflower.

i.

26 cm x 16 cm

ii.

iii.

iv.

v.

vi.

vii.