

Fibonacci Wreath

Activity Type: Crafting

Best suited for: Second & Third/Fourth Level / Age 8-11, 12-15

Maths involved: Fibonacci Sequence

Materials needed:

- A large piece of card, approx. A3 in size; any colour
- Craft paper in four or five different colours, including some greens
- A compass drawing tool
- A ruler
- A pair of scissors
- A pencil
- Glue

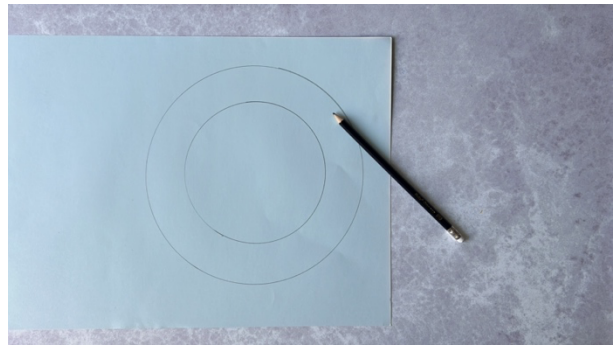
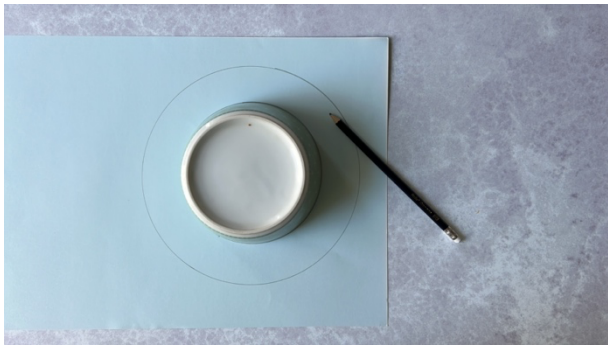
You will also need two circular objects to draw round, one about 6cm to 8cm smaller in diameter than the other. We used two bowls, with diameters of 14cm and 22cm.



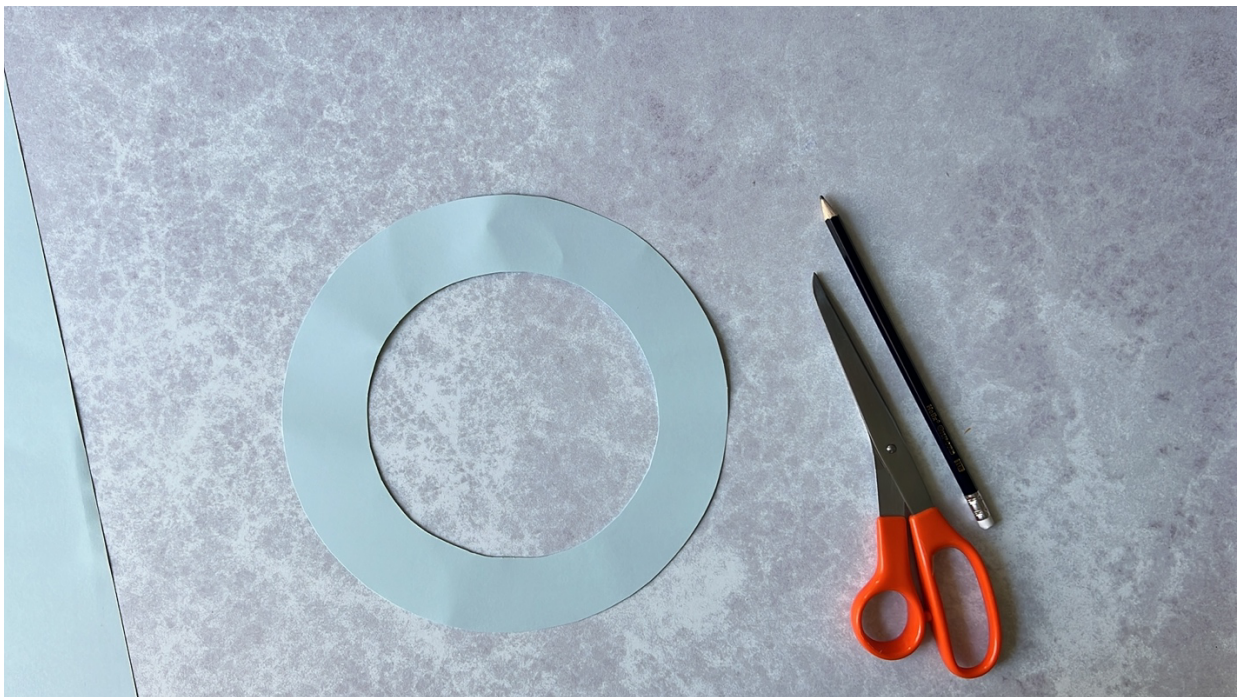
The Fibonacci Sequence is a sequence in which each number is the sum of the two preceding numbers: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55 and so on. This pattern and its numbers are found a lot in nature. For example, many flowers have 3, 5, 8, 13, 21 or more petals.

In this craft, we're going to use the Fibonacci sequence to create a paper wreath.

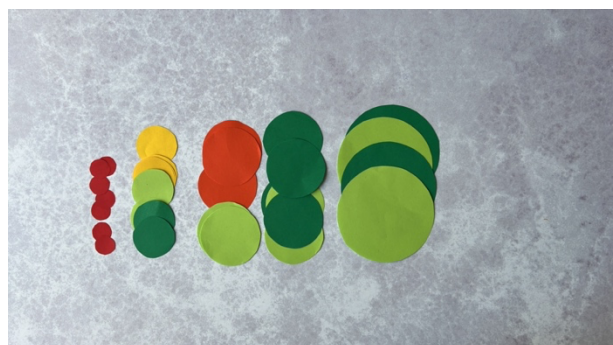
Step 1: Draw around your larger circular object on your piece of card. Then place your smaller circular object inside the first circle and draw around that. Make sure the inner circle is roughly equidistant on all sides to the outer circle. You should end up with a ring shape drawn out on your piece of card.



Step 2: Cut out the ring shape, by cutting around the outer circle and cutting out the inside of the inner circle. Put the ring aside for now, you will need it later.



Step 3: Set the compass to 1cm and draw some circles with a 1cm radius on your coloured paper. Then do the same for 2cm, 3cm and 5cm. Cut all the circles out.



We did 1cm circles in red (berries), 2cm and 3cm in yellow and orange (baubles), and 2cm, 3cm and 5cm in two different shades of green (wreath greenery). But you can choose different colours if you like.

Note: After 5cm the circles start to get really big, but if you wanted to make a really big wreath, for example as a joint class project in school, you could keep increasing the radius of your circles according to the Fibonacci sequence.

Step 4: Take the ring you cut out at the beginning. Now all you have to do is layer up all the coloured circles and glue them on to the ring.



And that's your Fibonacci wreath done!



Taking it further:

*You could measure out the numbers of the Fibonacci sequence as the **diameter** of your circles instead of the radius. Would that make your circles bigger or smaller? How many numbers in the Fibonacci sequence could you go up to before the circles get too big for crafting a wreath with?*