SPIRAL GALAXIES

There are galaxies out in space that look like spirals. In fact, our galaxy, the Milky Way has recently been shown to be a spiral galaxy.

One of the things that *SKA* will help us do is determine how galaxies form spirals.

Mathematicians study shapes like spirals, and because they can act like flat springs, they get used in a lot of different ways. They're handy shapes to know about, and look awesome too!

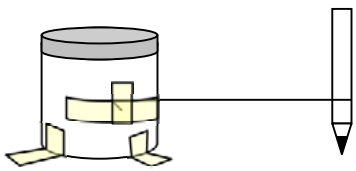
How to draw a spiral - from outside – in.

There are many different spirals, and many different techniques to draw those spirals. The sort that is probably the easiest to draw is called an *Archimedes' Spiral*.

You will need:

- Paper- we started with a piece of newspaper
- Sticky tape
- String (about 30-40 cm)
- Pencil
- A glass (or other cylindrical object, e.g. bottle lid)

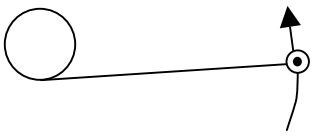
What to do:



Tie one end of the string to the pencil. Use the sticky tape to fix the other end to the side of the upturned glass.

(You may also want to tape the glass to the piece of paper. This will help stop the centre from slipping as you draw the spiral.)

Whilst keeping the string tight, start moving the pencil across the page. As the string winds around the glass, it will pull the pencil closer and closer to the glass. That's what an *Archimedes' Spiral* is- the distance between the arms of the spiral is constant.



You won't quite get to the centre of the spiral with this technique. However, it does allow you to explore what happens if you use different sized cylinders, or even different shapes.

What do you think might happen if you use:

A narrower glass as the centre piece? A wider one?

A square centre piece? Is that going to be different to a rectangular centre piece? What about a triangular piece? Make a prediction and test it.