The SKA will have thousands of radio telescopes all working together. All radio telescopes have the same shape dish. This shape is called a paraboloid. You can make a paraboloid by getting a parabola and rotating it around its centre.

Whilst it is fairly easy to plot and draw a parabola on graph paper, it is not the only way to do it. You can draw an approximation of a parabola using perfectly straight lines (it just takes a lot of them).

**Drawing Parabolas**

**You will need**

- Graph paper
- Ruler
- Pencil

**What to do**

The most famous way of doing this involves drawing a pair of axes like this. The scale of the axes will affect how the parabola forms. You might want to start with a scale of 1 unit per centimetre.

First, draw a line on the graph paper from the 6 on the vertical axis to the 1 on the horizontal axis.

Second, draw a line from the 5 on the vertical axis to the 2 on the horizontal axis.

Continue joining up the numbers (6 to 1, 5 to 2, 4 to 3, 3 to 4, 2 to 5 and 1 to 6).

You end up with an approximation of a famous curve called a parabola.

With only 6 points, the curve is noticeable, but still looks like it is made of lots of straight lines. The more points - and more lines you use - the more pronounced it becomes.

**Explore**

You can change what the curve looks like by altering the angle and length of the axes.

This parabola was drawn using axes set at 45°…

This parabola was drawn using axes set at different scales…
You can combine more than one set of axes. As long as the lines cross each other, you'll make a parabola.

In these examples, the length of the line that you draw changes - the line joining (0,1) and (6,0) is much longer than the line joining (3,4) and (4,3).

What do you think would happen if you created a set of parabolas, but using a set of axes like this?

What do you think would happen if you created a curve in the same sort of way, but kept the lines joining the points the same length? The lines won't always end on a unit, but that's alright.