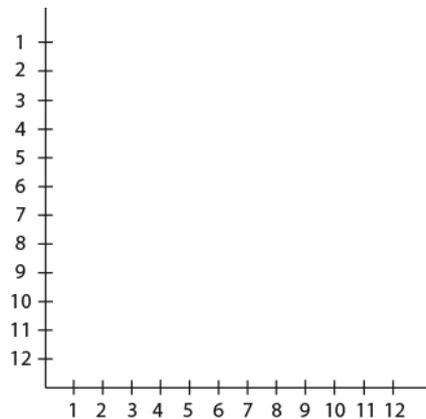


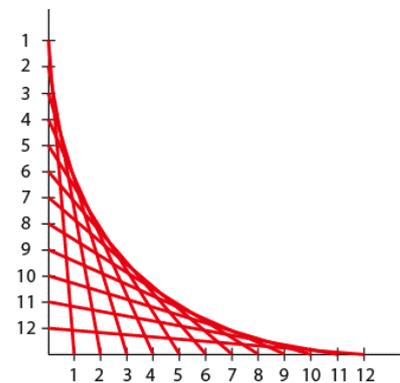
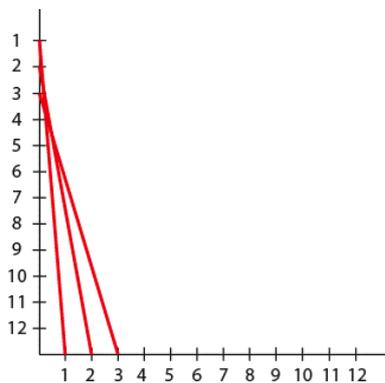
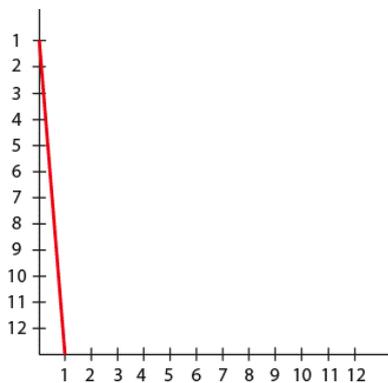
It is possible to create curves using only straight lines. String is perfect for this, giving rise to the name string art, but it is also possible to make intricate string art drawings using the same ideas.

A Curve from Straight Lines

1. With a ruler, draw two lines at right-angles to each other to form a set of **90° axes**. The horizontal line is called the **horizontal axis** and the vertical line is the **vertical axis**. Mark off points on each of the axes at regular intervals as shown below, and number the points. Make sure that you have the same number of points on each axis. (You can use one of our templates if you prefer.)



2. Draw a straight line from the point labelled 1 on the vertical axis to the point labelled 1 on the horizontal axis (as shown in the left-most picture below). Continue drawing straight lines between the pairs of points which are labelled with the same number until you have joined up all the pairs.

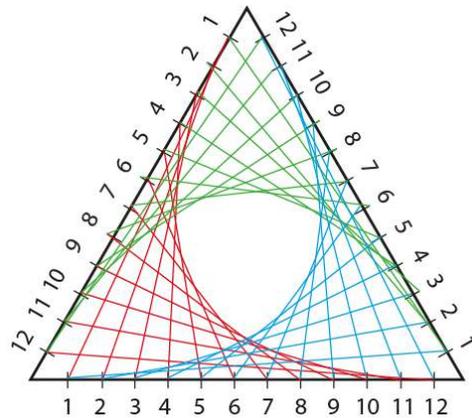
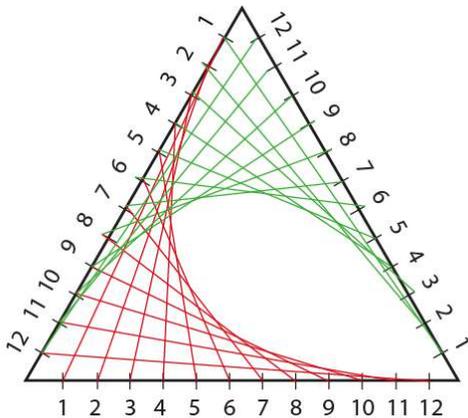
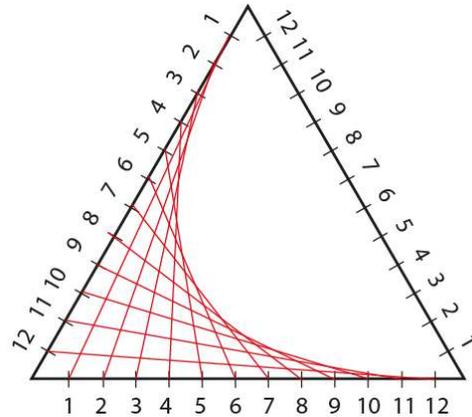
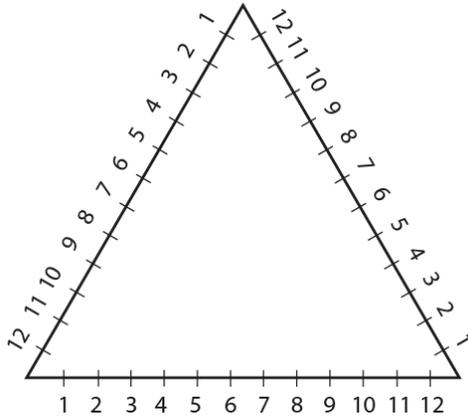


The curved line you have created is called a **parabola**. A parabola is a curve that occurs frequently in nature. For instance, it's the path that a ball follows when it is thrown through the air.

Changing Curves by Changing Axes

You can change the shape of your parabola by changing the angle of your axes. If you make the angle more than 90° , the curve will be flatter. If you make the angle less than 90° , the curve will be steeper. You can have more than two axes, or you can use other shapes in place of axes. We'll try both.

1. Draw an **equilateral triangle** (a triangle where each side is the same length and each angle is 60°), and divide each side up into numbered points as shown below. Treat each pair of sides like a set of axes and draw a parabola between them in the same way as before.



2. Create a star-shaped set of axes with five axes, or ten axes, or more. Experiment with which pairs of axes you draw curves between to create overlapping curves (below right).

