

Maths within Art and design

A **line of symmetry** is a line which divides a picture into two parts, each of which is the mirror image of the other. Pictures may have more than one line of symmetry.



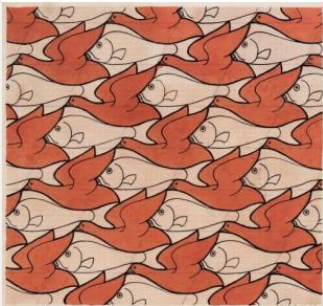
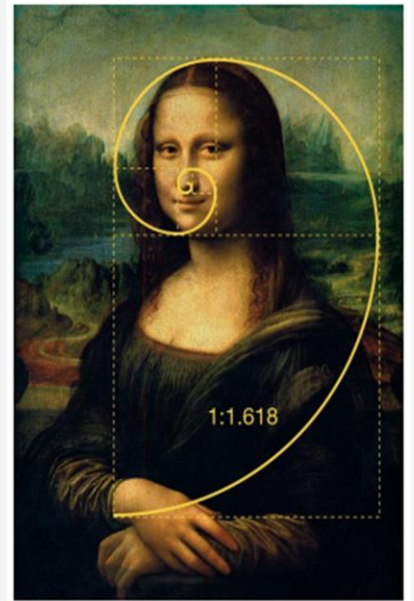
Rotational Symmetry Order 3

The number of positions a figure can be rotated to, without bringing in any changes to the way it looks originally, is called its **order of rotational symmetry**.

Many artists and architects have proportioned their works to approximate the **Golden Ratio** believing this proportion to be aesthetically pleasing. This is sometimes given in the form of the **Golden Rectangle** in which the ratio of the longer side to the shorter side is the golden ratio.

A **ratio** tells you how much you have of one part compared to another part. It is useful if you are trying to mix paints accurately and consistently

Perspective in art and design is an approximate representation, on a flat surface, of an image as it is seen by the eye. This links directly to enlargements and scale factors covered in Maths!



Tessellation is the process of creating a two-dimensional plane using the repetition of a geometric shape with no overlaps and no gaps. **Escher** was famous for creating detailed drawings using different tessellations.

Cubism is an early-20th-century avant-garde art movement. In Cubist artwork, objects are analysed, broken up and reassembled in an abstracted form— instead of depicting objects from one viewpoint, the artist depicts the subject from a multitude of viewpoints to represent the subject in a greater context. In Maths we also draw objects from different viewpoints using **plans**, **elevations** or **isometric drawing**.

Construction methods in art are organised techniques, systems, logical practices, planning and design in the creation of structure. In geometry **constructions** refer to the drawing of various shapes using only a compass and straightedge. No measurement of lengths or angles is allowed. How could you use this in your art lessons?



At Stanley High School