







6.1 Investigate Geometric Shapes and Figures

A Regular Polygons

- ✓ Two dimensional shapes
- ✓ All sides are equal
- ✓ All interior angles are equal

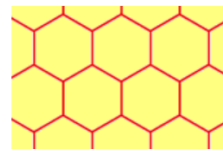
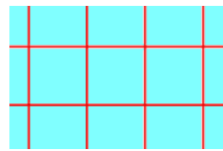
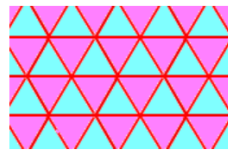
Examples:

Equilateral Triangle $n = 3$ $\alpha = 60^\circ$	Square $n = 4$ $\alpha = 90^\circ$	Pentagon $n = 5$ $\alpha = 108^\circ$	Hexagon $n = 6$ $\alpha = 120^\circ$	Octagon $n = 8$ $\alpha = 135^\circ$	Decagon $n = 10$ $\alpha = 144^\circ$
					

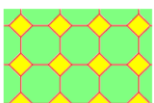
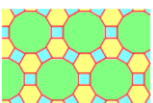
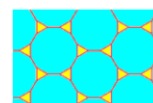
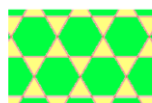
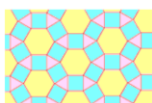
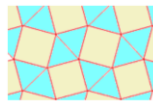
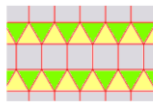
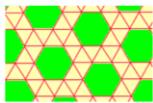
B Tessellation

- ✓ A pattern that covers a plane without overlapping or leaving gaps
- ✓ Also called tiling pattern
- ✓ Triangles, squares, rectangles, and regular hexagons may be used to tile a plane (interior angles divide evenly into 360°)

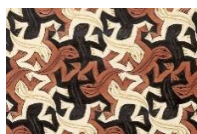
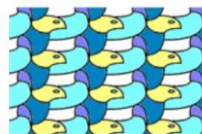
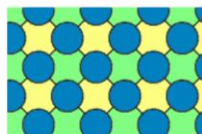
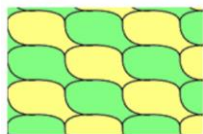
Examples: The only 3 regular tessellations are here:



Note. A semi-regular tessellation is made of two or more regular polygons. The pattern at each vertex must be the same! There are only 8 semi-regular tessellations:



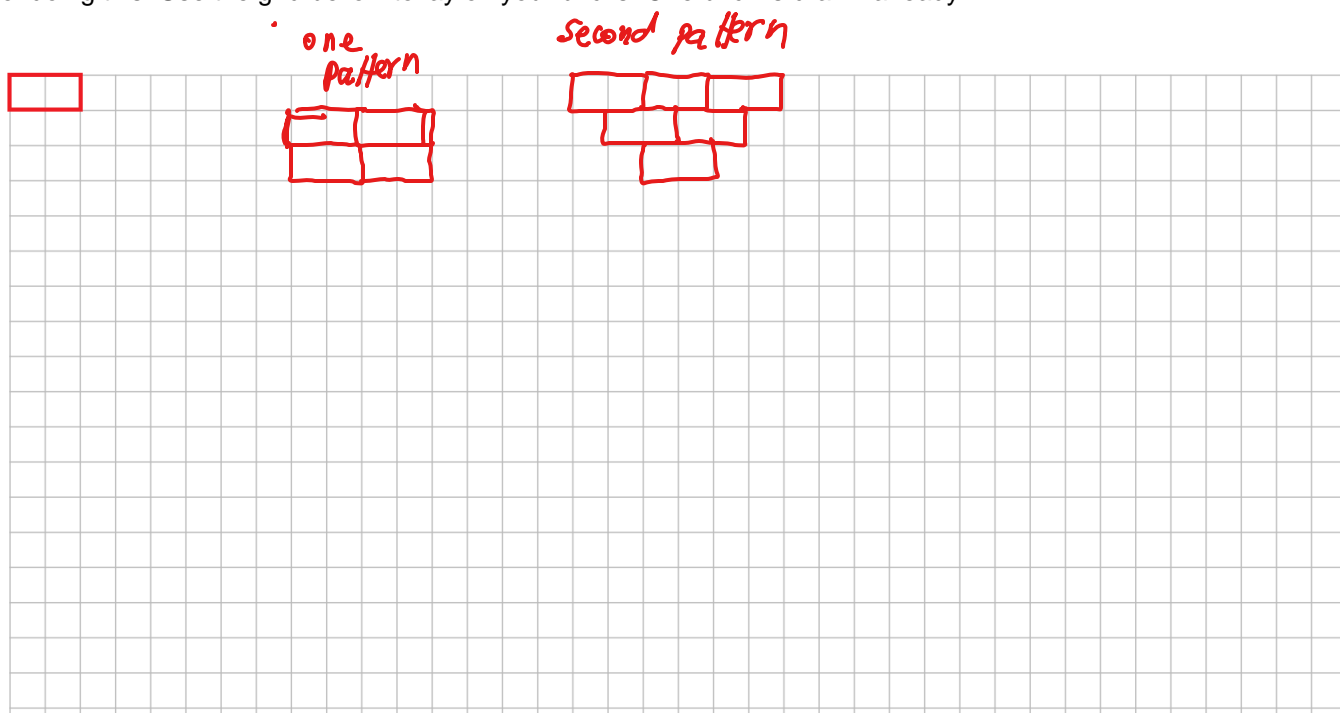
Note. There are other types of tessellations like:



Activity 1. Design your own tessellation by using the [Tessellation Artist](#).

Activity 2. Visit to see [M.C. Escher Foundation](#) to learn more about Esher art.

Activity 3. Use bricks of one by two units to create a tessellation. You must discover at least 4 different ways (patterns) of doing this. Use the grid below to lay on your bricks. One brick is drawn already.



Activity 4. Use four sizes of bricks: 2x1, 2x2, 2x3, and 2x4 to create a rectangular block that allows tessellation on a plane. Use the grid below to designed at least two ways (patterns). The bricks are already drawn to help you start.

