

## Tessellation

### OBJECTIVE:

The students will understand the relationship with constructions, parallel lines and the symmetrical uses of shapes. Symmetry will lead to the introduction of tessellations. It will help the students analyze the difference between a tessellation and a symmetrical picture.

The students will do a short project creating their own tessellation and reproducing it. They will be able to evaluate the use of the constructions to draw congruent shapes, angles and figures.

### You will need:

For each student, a piece of paper 12"x18" white paper

For each student, a template made of construction paper. A variety of templates will make the activity more interesting.

Crayons or colored pencils.

Tessellations are patterns which join together to cover a surface, leaving no empty spaces on that surface. This form of art is widely known due to the works of M.C. Escher, and is often used in math classes as a way of demonstrating congruency within patterns.

Geometric tessellations are not difficult to create, although they too require a high degree of precision. Artistic ones require greater efforts. The tessellations introduced here are simple-- you may want to explore more complex ones by following the links at the bottom of this page.

### The dictionary definition of tessellations

1. The action or art of tessellating; tessellated condition; a piece of tessellated work.
2. An arrangement or close fitting together of minute parts or distinct colours.

### The dictionary definition of tessellated

1. Composed of small blocks of variously coloured material arranged to form a pattern; formed of or ornamented with mosaic work.
2. Combined or arranged so as to form a mosaic.
3. Consisting of or arranged in small cubes or squares; chequered, reticulated.





Shape Example

1. This is a sample template. Print out the large image (use link from thumbnail), cut out the shape, copy to construction paper, and cut out.
  2. Trace the template on the paper, with the template edge flush with the edge of the paper.
  3. Slide the template along the edge of the paper, trace it again, touching the previous shape.
  4. Slide the template along the edge of the paper, trace it again, touching the previous shape (with smaller templates, you will repeat this step more times).
  5. Invert the template vertically, trace repeatedly in the same way (illustrated here in green).
  6. Invert the template again and repeat until the whole paper is covered.
- Color the paper. Smaller templates produce a much richer effect, but take longer to complete

