

Math 4 - Act. 18: Tessellation Designs

Summary

Students will create a tessellation design by tracing a shape repeatedly.

Materials

- 4"x4" square pieces of cardstock
- masking tape
- scissors
- large pieces of art paper (at least 18"x18")

Additional Resources

There are wonderful Escher websites on the net. Visiting some of the sites could be a great homework or computer lab assignment for students.

Background for Teachers

A great source of information about tessellations and their art and math connections is found in M.C. Escher's work. Tessellations are a series of repeating patterns or designs that interlock. The positive and negative spaces work together to create images. Included is a diagram of how to make a figure that will tessellate from a quadrilateral. This project can become not only a math lesson, but an art one as well. (See Tessellation Example.)

Intended Learning Outcomes

3. Reason mathematically.
4. Communicate mathematically.

Instructional Procedures

Invitation to Learn

Can we make an art design by simply sliding and tracing a shape?

Instructional Procedures

Introduce the concept of slide (translation). Demonstrate by sliding the body.

To make tessellations, measure and cut a four-inch square piece of paper.

On the right side of the paper, draw a decorative and simple line design, from the top corner to the bottom corner. A wavy line is good. Cut your shape out along the line. Using a slide (translation) move the shape to the left side of your paper. With masking tape, tape the shape on the left uncut side of the paper, in the exact position it was cut from on the right.

Repeat the process on the top of the shape. Tape it to the bottom. Now you have your tessellation shape made from a square.

On your white paper, lay the shape down and trace lightly around the shape. Keep doing this by matching the shape fit to the previously penciled shape. The actual design will run downhill on the paper. This is normal.

Extensions

Possible Extensions/Adaptations/Integration

Escher art is a wonderful topic to explore for art, math, and science.

Homework & Family Connections

Share tessellations made at school with family.

Assessment Plan

Use pattern block piece and ask students to make a tessellation.

Authors

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