

Name _____ Date _____

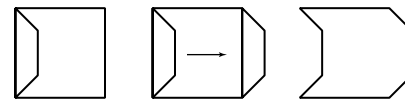
Transformations and M.C. Escher

(Pages 220–223)

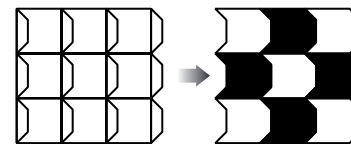
A **tessellation** is a tiling made up of copies of the same shape or shapes that fit together without gaps and without overlapping. Unique, interlocking, puzzle-like patterns can be made using **transformations** to change tessellations. One common transformation is a slide, or **translation**, of a figure. Some tessellations can be modified by using changes with a **rotation**.

EXAMPLE

The square at the right has had the left side changed. To make sure the pieces, or pattern units, will tessellate, slide or translate the change to the opposite side and copy it.

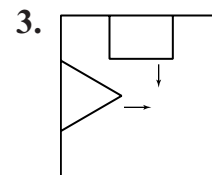
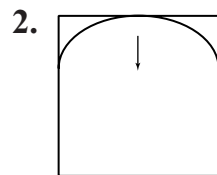
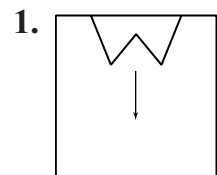


Now change all of the squares in a tessellation the same way. The tessellation takes on qualities like a painting by M. C. Escher when you add different colors or designs.

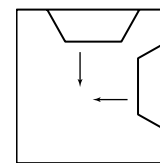


PRACTICE

Make an Escher-like drawing for each pattern described. Use a tessellation of two rows of three squares as the base.



4. **Remodeling** The Louden family is remodeling the entrance to their home. They would like to put in a new tile floor pattern using the transformation shown at the right. Draw the tessellation.



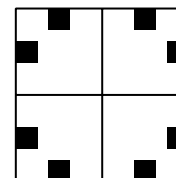
5. **Standardized Test Practice** Name the polygon and the transformation that were used to produce the tessellation at the right.

A square, rotation

B square, translation

C rectangle, translation

D triangle, rotation



Answers: 1–4. See Answer Key. 5. A