Similar

Purpose

Students will identify and draw two-dimensional shapes that are similar.

Materials

For the teacher: geoboard, dotted grid transparency, protractor, ruler
For each student: geoboard, 6 rubber bands, copy of Black Line Master (BLM) *Similar*, dotted grid paper, protractor, ruler

Activity

A. Introduction

1. Hand out geoboards, six rubber bands, a copy of the BLM *Similar*, and grid paper to each student.
2. Give students time to become acquainted with the geoboard. They should be able to make different kinds of triangles, squares, and other parallelograms.

B. Class Activity

1. Ask students to put a rubber band on the geoboard to form the small triangle in Example 1 of the BLM.
2. Put on another band overlapping that triangle so that each side is twice as long. Ask the students to look at the geoboard and identify two triangles.
3. Tell students that *similar triangles* are triangles whose corresponding angles are equal, while the lengths of the corresponding sides are in proportion.
4. Tell students to draw these as two separate triangles on the dotted grid paper. The sides of the triangles should not overlap.
5. Draw the two triangles separately on the chalkboard and point out the corresponding sides and angles.
6. Have students measure the sides and angles of their triangles while you measure the ones drawn on the board. Verify that corresponding sides are in proportion and corresponding angles are of equal measure.
7. Explain to students that similar shapes are not limited to triangles.

(continued)

connecting across the curriculum

Science

Take a walk with students. Find large objects, such as trees, buildings, etc. Measure the shadows cast by these objects. Have the students measure their own shadows and their heights. Use the rules for similar triangles to find the height of the large objects.

EXTENDING THE ACTIVITY

Ask students to look for similar objects that appear in their everyday life. Have students make a list of objects in or around their home that are similar.

Standards Link
6.2.6

Activity (continued)

8. Have students make rectangles on their geoboard like those shown in Example 2 of the BLM.
9. Repeat steps 5 through 7 using the two rectangles on the geoboard.
10. Instruct students to make three squares on the geoboard like those shown in Example 3 of the BLM.
11. Repeat steps 5 through 7 using the three squares on the geoboard.
12. Explain to students that there can be more than two shapes that are similar to each other.

Classroom Assessment

Basic Concepts and Processes

During the activity and when reviewing the BLM, discuss the following questions with your students to gauge their understanding of the Standard Indicator:

📖 Are all triangles similar because they have the same number of sides?

💡 Have you measured the angles and the sides? What do you notice?

📖 Are all rectangles similar?

💡 Have you measured the angles and the sides? What do you notice?

📖 Are all squares similar?

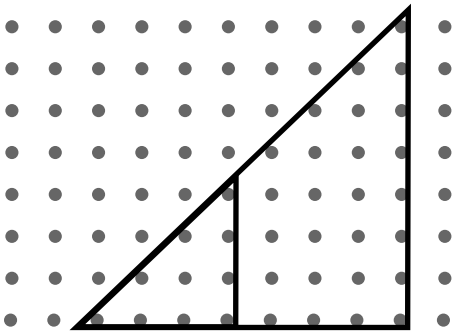
💡 Have you measured the angles and the sides? What do you notice?

Name: _____

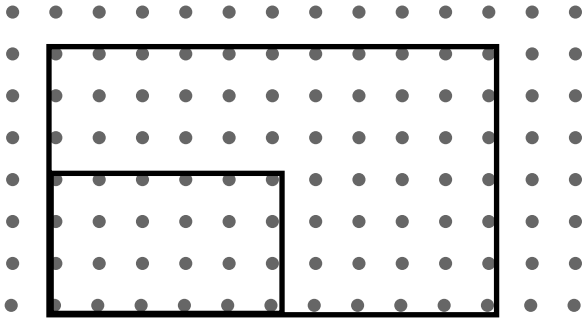
SIMILAR

Use these diagrams as examples of the shapes to be constructed on your geoboard.

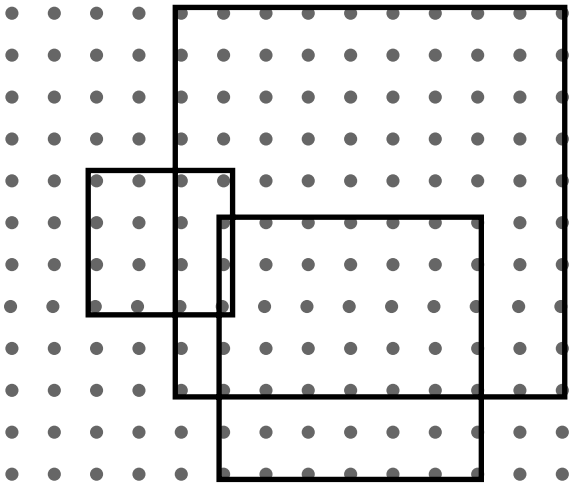
Example 1:



Example 2:



Example 3:



SIMILAR

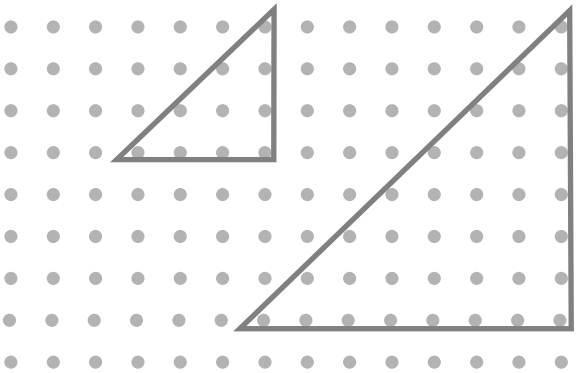
Teacher Directions

Distribute one copy of the BLM *Similar* to each student. Tell students to construct each shape on their geoboards. Have students draw each individual object from the BLM on dotted grid paper (there should be no overlapping sides).

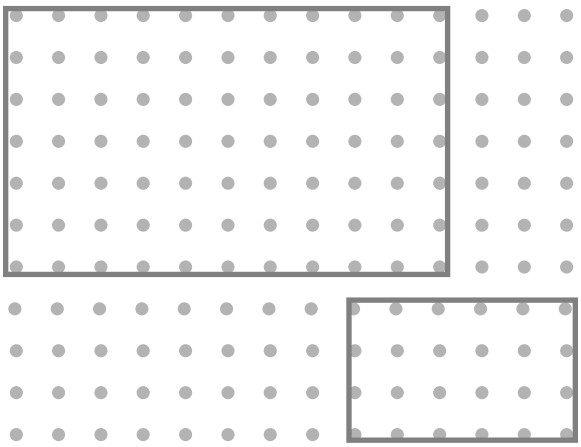
Answer Key

Students drawings should look similar to these.

Example 1:



Example 2:



Example 3: