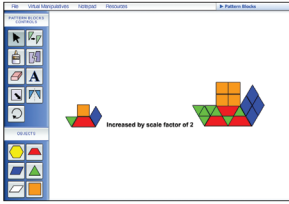
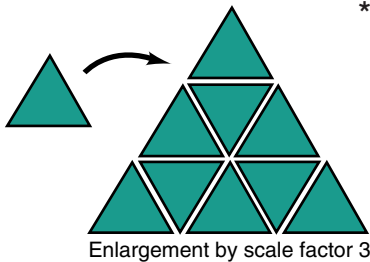
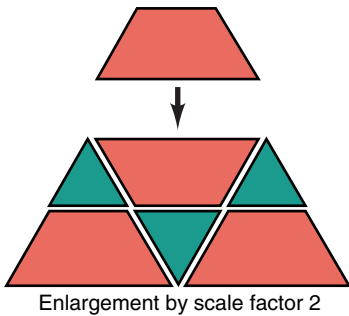


MATH ACTIVITY 11.3

Virtual Manipulatives



www.mhhe.com/bennett-nelson



Enlargements with Pattern Blocks

Materials: Pattern block pieces in the Manipulative Kit or Virtual Manipulatives.

1. The single trapezoid (red) at the left below is similar to the large trapezoid below it, which is formed with six pattern blocks.
 - a. One condition for similarity is that the lengths of the corresponding sides of two figures have the same ratio. What is the ratio of the lengths of the corresponding sides of these two figures?
 - b. The second condition for similarity is that the corresponding angles of the two figures have the same measure. Explain which angles are corresponding and how you know they have the same measure.
 - c. Because each side of the large trapezoid is 2 times the length of each corresponding side of the small trapezoid, the large trapezoid is an **enlargement** of the small trapezoid by a **scale factor** of 2. The area of the large trapezoid is how many times the area of the small trapezoid? Write a sentence or two to explain your reasoning.
 - d. Construct an enlargement by a scale factor of 2 for each of the other pattern blocks. Sketch figures and describe how the area of a figure is related to its enlargement.
- *2. The large triangle at the left is an enlargement of the small triangle by a scale factor of 3. Build and sketch an enlargement by a scale factor of 3 for each of the other five pattern blocks. (Trace patterns blocks, if there are not enough.) Explain how the area of each enlargement compares to the area of the single pattern block.
3. Build and sketch an enlargement of each of the following figures for the given scale factor. State a conjecture about how you think the area of an enlargement is related to the area of the smaller figure. Write an explanation to support your reasoning.

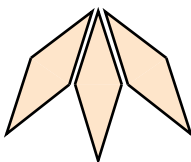
- a. Enlarge by a scale factor of 3



- b. Enlarge by a scale factor of 4



- c. Enlarge by a scale factor of 3



- d. Enlarge by a scale factor of 2

