Dear Family,

In this chapter, your student will learn about geometric transformations. Some of the skills your student will practice are:

- recognizing translations, reflections, rotations, and dilations
- drawing the image of a figure after a translation, a reflection, a rotation, or a dilation
- finding the coordinates of points after a given translation, reflection, rotation, or dilation

Activity

Recognizing the effects of transformations is a useful skill that students may use in their future math classes. You can help your student understand this concept with this activity.

- In the diagram below, ACEG is a square, and B, D, F, and H are the midpoints of the sides of the square. The eight small triangles are all congruent.

![Diagram of a square with midpoints and small triangles]

- With your student, choose two of the small triangles and describe a transformation that maps one of the triangles onto the other. For example, a reflection in GC maps ∆AIH onto ∆EIF.
- Next, try to find another way to map one of the triangles onto the other. For example, another way to map ∆AIH onto ∆EIF is to rotate it 90° clockwise about point I, then reflect it in HD.
- Repeat the activity with more pairs of triangles.

Vocabulary to Practice

A geometric transformation maps every point in a plane onto its image.

A reflection about a line, or flip, maps a figure to its mirror image on the opposite side of the line.

A translation, or slide, moves every point on a plane the same distance in the same direction.

A rotation, or turn, moves a figure through a given angle about the center of the rotation.

A point that is mapped onto itself by a transformation, such as the center of a rotation or the points on a line of reflection, is called an invariant point.

Online Resources

For additional Parent Resources my.hrw.com