NAME:_____

1. Explain how a translation affects the coordinates and size of a figure.

2. How are a translation and an image related?

3. Give an example of how an interior designer might use translations.

4. Use translations to draw a 3D image. Begin by drawing a polygon on graph paper. Translate it up and to the right. Connect each vertex with its image.

5. Summarize the isometries in this chapter.

NAME:_____

6. Describe any isometries you see in the design on the Native American knife sheath.
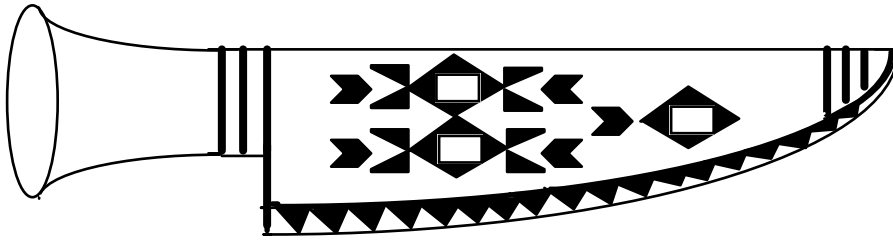
7. A tessellation is a repeated geometric design that covers the plane with no gaps and no overlaps. The design in the pattern below is based on an equilateral triangle. Describe the isometries needed to create a tessellation from the figure shown.
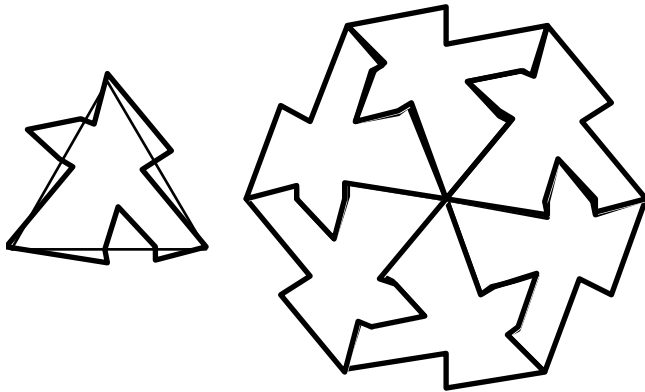
8. Create a tessellation based on an equilateral triangle or a rectangle. Describe the transformations you used to create your tessellation.

[1] Translations right and left change the *x*-coordinates; translations up and down change the *y*-coordinates. The size is not affected.

[2] A translation is performed by sliding a point, line or shape into a new position without turning it or flipping it over. The new shape is its image.

[3] Answers may vary. Sample: in creating a wallpaper border

[4] Check students' work.

[5] A reflection involves flipping the figure in a line. A translation involves moving the figure up or down and to the right or left. A rotation involves moving the figure around a point, and a glide reflection involves three reflections, which can be rewritten as a translation and a rotation.

[6] Answers may vary. Sample: a translation could be used to create the diamond shape on the right, and a glide reflection could be used to create the adjacent shape.

[7] translations and rotations

[8] Check students' work.