Name_____ Date_____

# 2.2 – Translations Activity

## Key Terms

Work with a partner. Define the following terms using your book or some other available resources.

Transformation - _____

_____

Translation - _____

_____

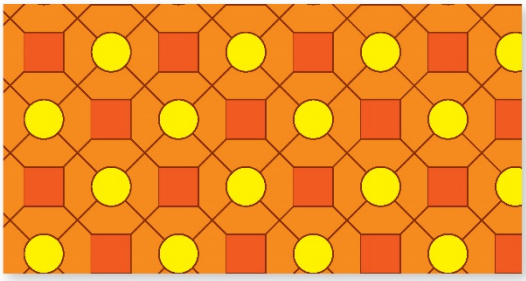
Draw an example of something that is translated:

## Activity 1 - Describing

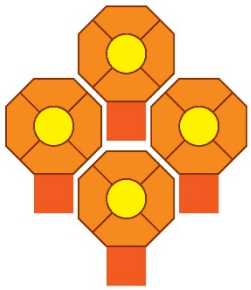
Work with a partner. Can you make the tessellation by translating single tiles that are all of the same shape and design? If so, show how. (You can trace on the image that would be the single tile that can be translated, but you still have to describe it in words.)

**a. Sample:**

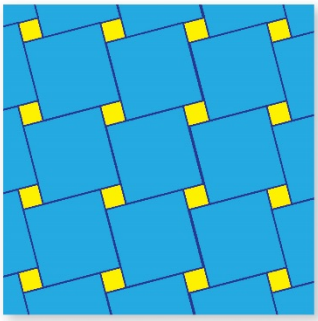
Tile Pattern



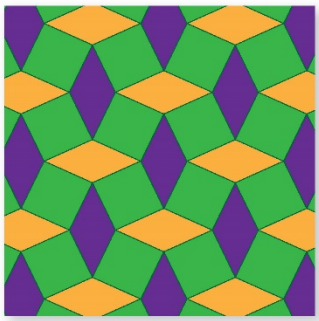
Single Tiles



**b.**



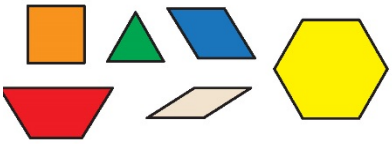
**c.**



## Activity 2 - Tessellations and Basic Shapes

Work with your partner.

a) Which pattern blocks can you use to make a tessellation? For each one that works, draw the tessellation. [If you have pattern blocks available, you can (1) physically make it, (2) take a picture of it, and (3) paste the image in the available space here.]



b) Can you make the tessellation by translating? Or do you have to rotate or flip the pattern blocks?

## Activity 3 - Designing Tessellations

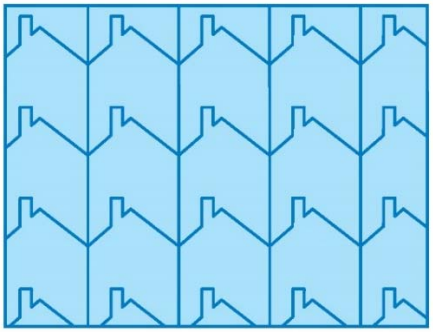
Work with a partner. Design your own tessellation. Use one of the basic shapes from Activity 2.

**Sample:**

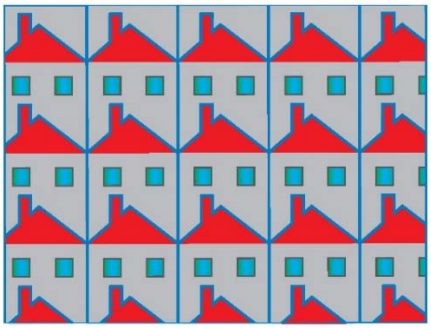
**Step 1:** Start with a square.

**Step 2:** Cut a design out of one side.

**Step 3:** Tape it to the other side to make your pattern.



**Step 4:** Translate the pattern to make your tessellation.



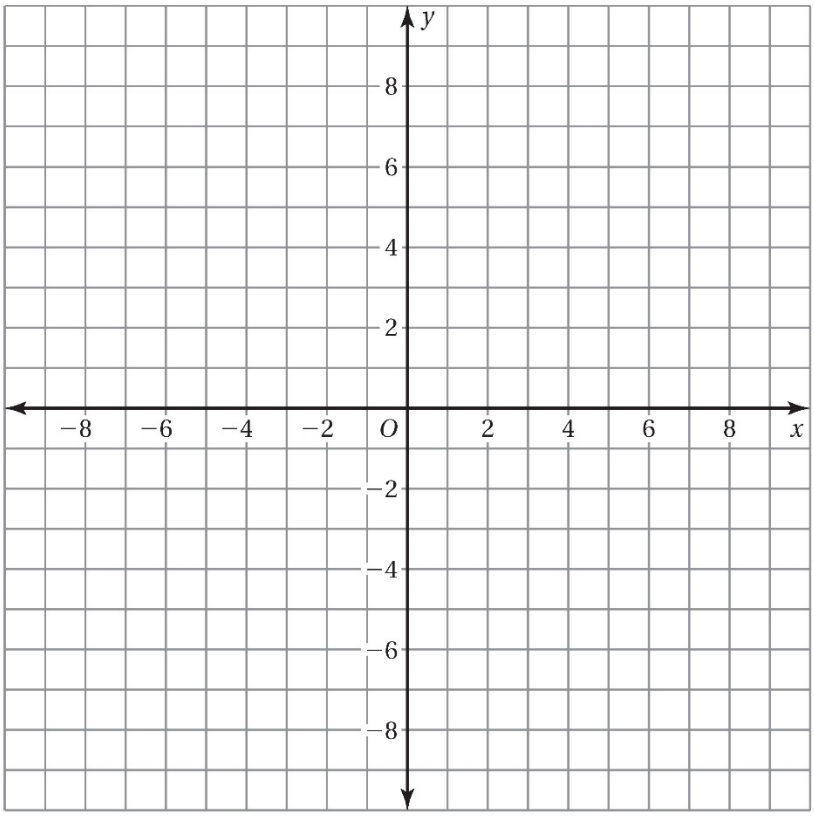
**Step 5:** Color the tessellation.

You may use the following gridlines to help you design this. (Clue: If you are using Notability, you cut and paste your design repeatedly!!)

## Activity 4 - Translating in the Coordinate Plane

a) Draw a rectangle in a coordinate plane. Find the dimensions of the rectangle.

b) Move each vertex 3 units right and 4 units up. Draw the new figure.List the vertices.




c) Compare the dimensions and the angle measures of the new figure to those of the original rectangle.

d) Are the opposite sides of the new figure parallel? Explain.

e) Can you conclude that the two figures are congruent? Explain.

f) Compare your results with those of other students in your class. Do you think the results are true for any type of figure?

## What Is Your Answer?

5) IN YOUR OWN WORDS How can you arrange tiles to make a tessellation? Give an example.

6) PRECISION Explain why any parallelogram can be translated to make a tessellation.

**16. ICONS** You can click and drag an icon on a computer screen. Is this an example of a translation? Explain.

**23.** Problem Solving In chess, a knight can move only in an L-shaped pattern:

- *two* vertical squares, then *one* horizontal square;
- *two* horizontal squares, then *one* vertical square;
- *one* vertical square, then *two* horizontal squares; or
- *one* horizontal square, then *two* vertical squares.

Write a series of translations to move the knight from g8 to g5.