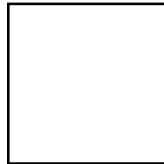# Algebra II

Tessellation Project Name:_____ **Period:**_____ **Due Date** _____

What is a Tessellation?

- A pattern that covers a surface by transforming the same figure (tile) so that there are no overlapping or empty spaces.

First you need to make your tile (template) that you will trace repeatedly. There are three types of tessellations: Translation, Rotation, and Reflection. You may choose which one you wish to create. *When cutting your template pieces, there is no trimming allowed. This is very important!*
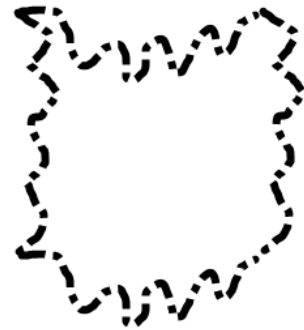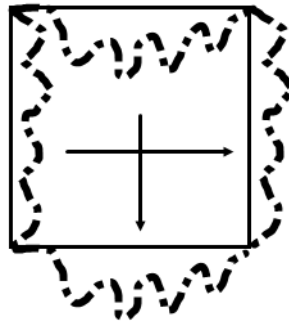
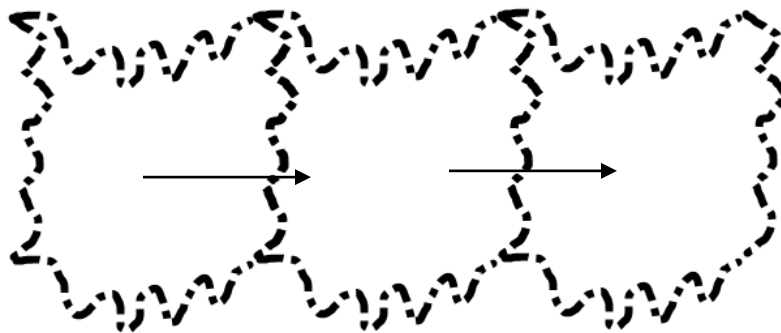All of the types can start from a square. Other shapes, such as equilateral triangles work, too. Feel free to experiment with other shapes if you are interested in bonus.

Translation Tessellation

Cut a piece out of the top of the square (make sure that it goes from corner to corner). Take the piece and slide it to the bottom and tape it in place. Repeat the same process on one of the sides. *(Do not attach it to an adjacent edge. Do not flip the piece around. Do not overlap the edges when taping.)*
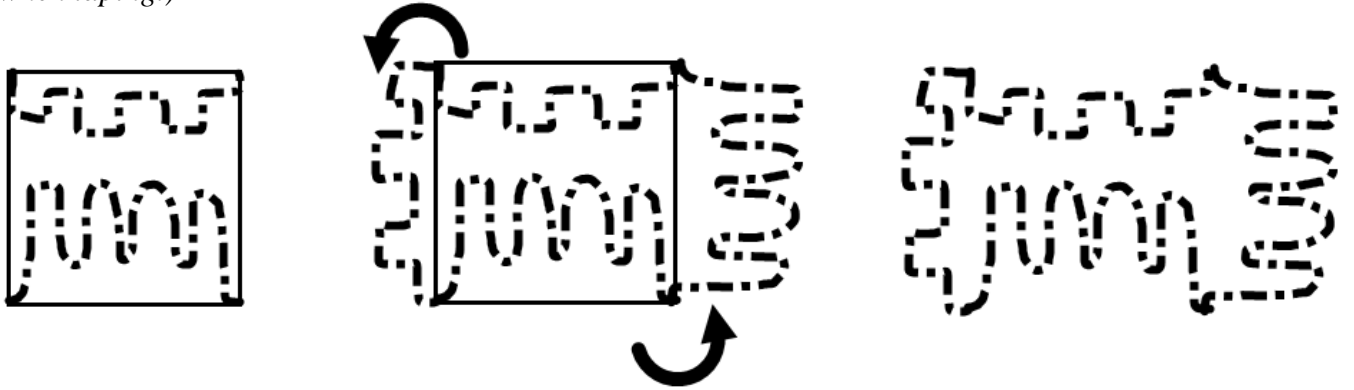
To tessellate the image, just trace the piece then slide the piece so the edges match up and trace it again.
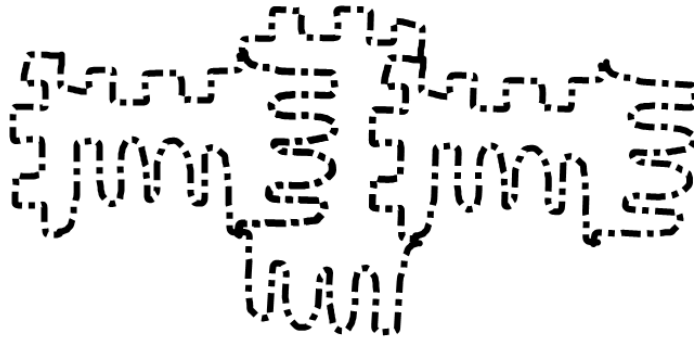
Rotation Tessellation

Cut a piece out of the top of the square. Rotate the piece 90° so that is it positioned on a side adjacent to the top and tape it into place. Repeat this process with the bottom of the square. *Instead of sliding the piece, rotate it to an adjacent side of their square (not an opposite side). Tape the straight edges together. (Do not overlap the edges when taping.)*
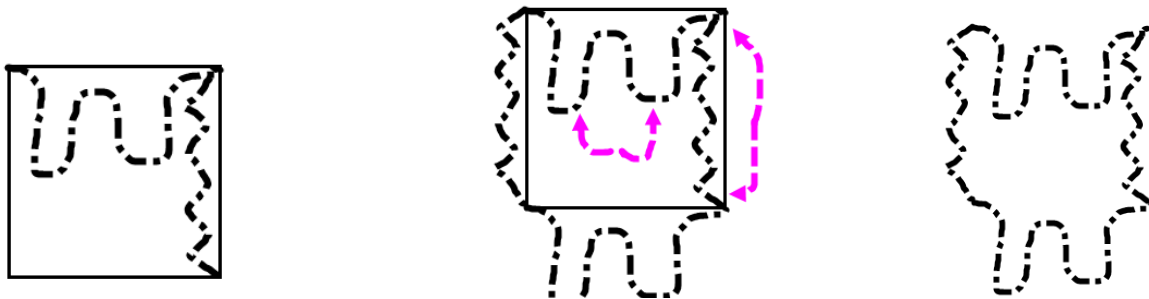
To tessellate the shape, trace the shape, and then turn the shape 90° so that the shape that fits with in the pieces.

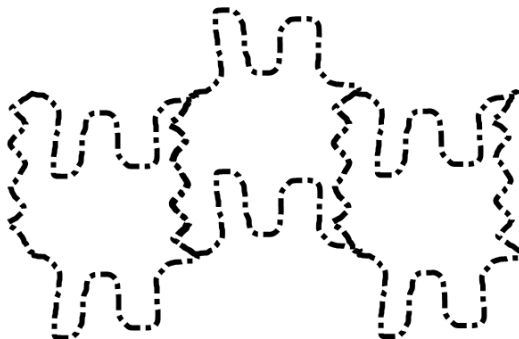# Reflection Tessellation

Cut a piece out of the top. Then flip it left to right (like a reflection over the y-axis), slide it to the bottom and then tape it into place. Then cut a piece out of the side, flip it top to bottom (like a reflection over the x-axis), slide it to the opposite side and tape it into place.

To tessellate this shape, trace the shape, then flip it left to right, and turn it 180°

Tessellation Rubric　　　　　　　**Name: _____**

DUE _____　　　　　　　**Period: _____**

Rubric

Your final product must include:

- Correctly tessellated cut and taped tile. (1 pt)
- The original tile (template) that you tessellated with your name, the name the type of tessellation, and shape you originally started with WRITTEN on the back of the tile. (1 pt)
- The image tessellated enough times to fill the entire page (8.5x11 is perfect, but you may create a larger product if you like). Images on the edge of your paper will be partial images. (1 pt)
- The tessellated images MUST be colored to look like something. Simply coloring the shapes in will not earn you full credit. (1 pt)
- Neat and clean drawing (1 pt)
- <u>Bonus</u> may be awarded for using a different shape other than a square or rectangle and all other work above what is required. (1 pt)

Criteria	Points Possible	Points Earned
Correct Tessellated Tile	1	
Name, Type of tessellation, and shape written on tile	1	
Covers Entire Page8.5 x 11 paper (at least)	1	
Picture created or some image	1	
Colored	1	
Neatness	1	
Total Points	**6**	
Bonus if used a different shape then a square or rectangle	+1	