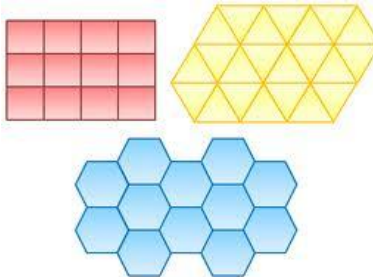


Name \_\_\_\_\_

## Tessellations Mr. Huff



## Introduction

Tessellations are formed by *translating*, *rotating*, and *reflecting* polygons or organic shapes that have the same edges in a plane or in space. Simple geometric tessellated designs began appearing on Greek pottery as early as 490 BCE. Tessellations also appear in nature in the form of honeycombs. Some plants and animals also have tessellated designs. Rows of scales, feathers, segmented shells and crystals are examples of natural tessellations. Tessellations can also be connected to create forms. For this unit we will be working only with tessellations in a flat two dimensional plane.

Your task is to create a tessellation to which you can assign personal meaning. The meaning can be as simple or complex as you choose. But you should be able to associate a meaning *that you can write about* to each of the elements in your tessellation. The shape you choose and the design you apply should be meaningful to you.

**How will you do this?** You will need to start with a 12"x18" piece of paper, a 3"x3" card, Pencil, ruler, tape, Scissors, colored paper or colored pencils, and a dark marker.

**First**, LIGHTLY mark the 12"x18" paper with a 3" grid. Be sure to give yourself two reference marks per grid line to ensure all of your grid lines are parallel with the edges of the paper. Check to make sure your card and your grid lines are the same size. Put your name on the paper on the opposite side you drew the grid.

**Second,** Think of some possible meanings you would like to assign to your design and explore shapes that you feel would be effective to communicate your idea.

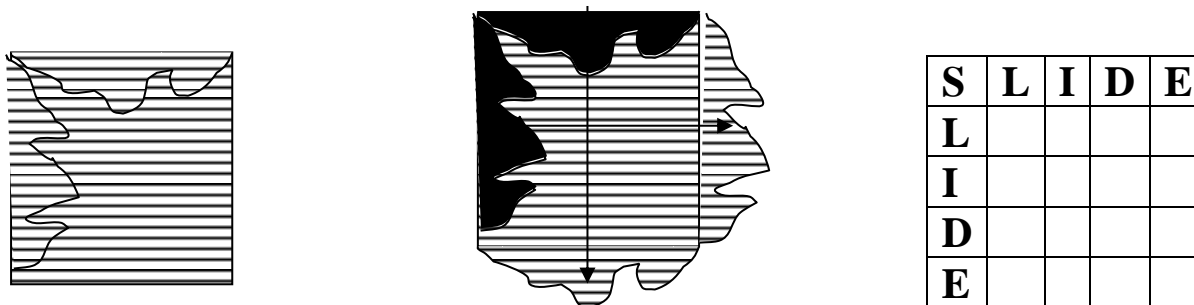
*Please no recognizable symbols like hearts or stars.*

**Required: Explain the meaning of your design choices in your sketch book.**

Next, following the specific instructions for *translation* tessellation, *lightly* draw lines from corner to corner that represent the meaning you want to assign to your work. For example, if your meaning is emphatic and energized, try angular lines. If the meaning you want to relay is less concrete, like an idea or a feeling, softer curves may be the most effective way to relay that meaning. Cut carefully along the lines and tape the pieces according to the specific instructions for *translation tessellation*. Your results will be unsuccessful if you do not follow the specific instructions

**Finally,** you may choose to cut your designs from another color of paper or you may neatly color the shapes with colored pencils alternating a light and a dark value like a checker board. You must also apply a surface design to each shape regardless of your color application technique.

## Translation



Construct your translation template by drawing a line from the top right corner to the top left corner. Next draw a line from the top left corner to the bottom left corner. Cut along the lines and slide the shape from the top straight to the bottom. Slide the shape from the left side to the right side. Line up the blue index card lines and tape the pieces in place. When tracing your template on the grid, Line up the right vertical line of the grid with the original right border of the index card. Also line up the bottom horizontal line on the grid with the bottom original horizontal line of the index card. Trace the template and slide the template to the right. You will be able to line up your template following the previous steps in the cell to the right. Trace and repeat until all of the cells are completed.

Name \_\_\_\_\_

### Tessellations Rubric

	Excellent 5	Good 4	Fair 2	Poor 0	Total
<b>Craftsmanship</b>	Color was applied neatly within the boundary of the shape, all pencil lines have been erased, all shapes are uniform and fit together with no gaps, no excess glue is visible, name is neatly written on the back.	Color was applied neatly within the boundary of the shape, most pencil lines have been erased, all shapes fit together with no gaps, some excess glue is visible, name is neatly written on the back.	Color was applied neatly within the boundary of the shape, some pencil lines have been erased, some shapes fit together with no gaps, some excess glue is visible, name is neatly written on the back.	Color was not applied neatly within the boundary of the shape, most pencil lines have not been erased, all shapes do not fit together with no gaps, excess glue is visible, name is neatly written on the back.	
<b>Specifications</b>	3"x3" grid was accurately plotted and shapes are consistently placed accurately on the 3"x3" grid	3"x3" grid was accurately plotted. Most shapes are placed accurately on the 3"x3" grid	3"x3" grid was accurately plotted. Some shapes are placed accurately on the grid	3"x3" grid was not accurately plotted. Some shapes are placed accurately on the grid	
<b>Design</b> <u>Write the meaning of your design in your sketch book.</u> <u>Turn your sketch book in along with this project.</u>	Design was applied identically on each piece. Design conveys meaning which was documented by student.	Design was applied nearly identically on each piece. Design conveys meaning which was documented by student.	Design was applied on each piece. Design conveys meaning which was documented by student.	Design on each piece was missing or incomplete. Student did not document the meaning of the design.	
<b>Time</b>	Used all of the allotted time. Work on this project was consistently focused.	Used most of the allotted time working on this project. Most of the work on this project was focused.	Used only some of the allotted time working on this project. Required redirection one or more days.	Used very little of the allotted time working on this project. Required redirection more than two days.	
<b>Totals</b>					

### Common Core

- CCSS.ELA-Literacy.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- CCSS.ELA-Literacy.RST.6-8.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
- CCSS.ELA-Literacy.RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.