

LESSON
82

- **Tessellations**

Objectives

- Identify and create tessellations.
- Describe the transformation that can be used to tessellate a shape.
- Use reflections to determine that a tessellation has symmetry.

Facts

Divide.



0:01:15



Facts

Divide.

$9 \overline{)81}$	$9 \overline{)27}$	$5 \overline{)25}$	$3 \overline{)6}$	$9 \overline{)45}$	$3 \overline{)9}$	$8 \overline{)32}$	$4 \overline{)16}$	$6 \overline{)12}$	$8 \overline{)56}$
$9 \overline{)9}$	$7 \overline{)42}$	$7 \overline{)14}$	$7 \overline{)28}$	$8 \overline{)24}$	$8 \overline{)40}$	$9 \overline{)18}$	$9 \overline{)72}$	$6 \overline{)18}$	$9 \overline{)54}$
$7 \overline{)49}$	$4 \overline{)8}$	$6 \overline{)36}$	$4 \overline{)12}$	$8 \overline{)64}$	$2 \overline{)4}$	$0 \overline{)0}$	$6 \overline{)24}$	$1 \overline{)8}$	$7 \overline{)35}$
$7 \overline{)21}$	$5 \overline{)20}$	$8 \overline{)16}$	$6 \overline{)30}$	$9 \overline{)36}$	$5 \overline{)15}$	$8 \overline{)48}$	$5 \overline{)10}$	$9 \overline{)63}$	$7 \overline{)56}$

LESSON
82

- **Tessellations**

Objectives

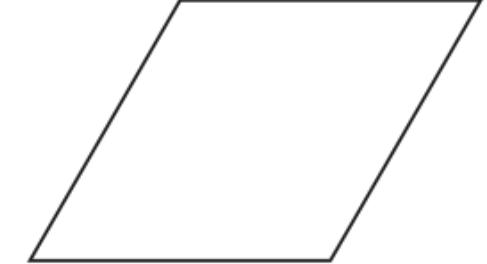
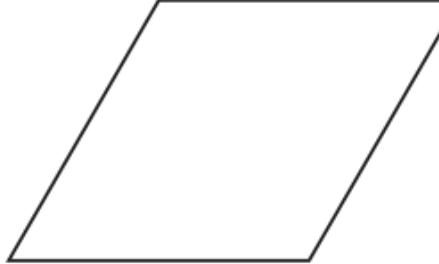
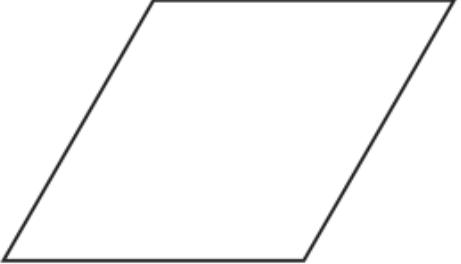
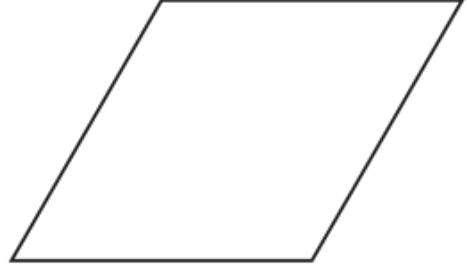
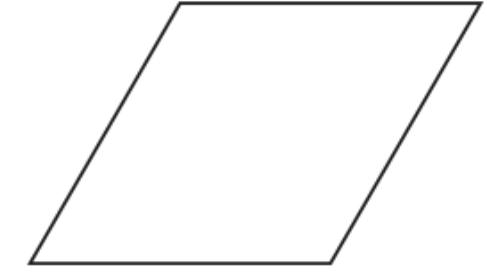
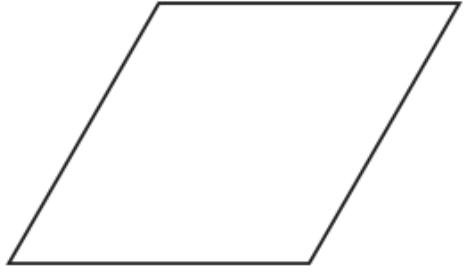
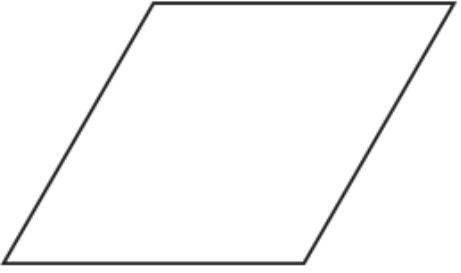
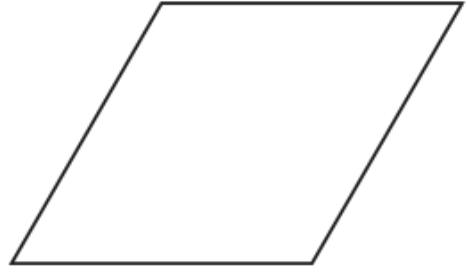
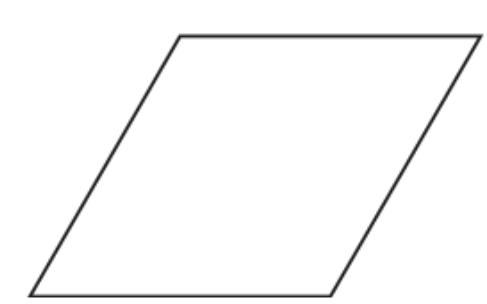
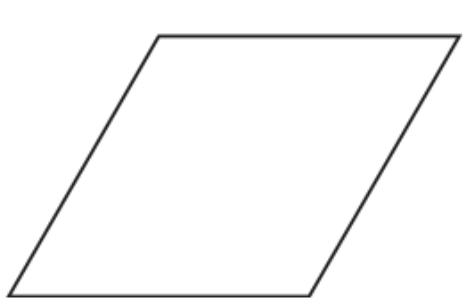
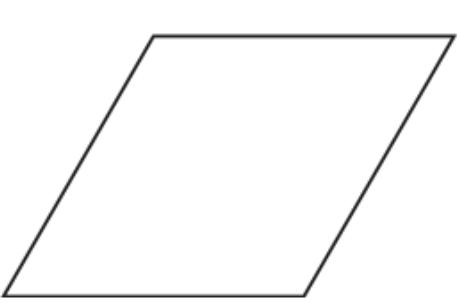
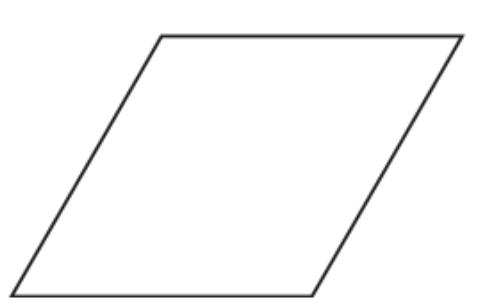
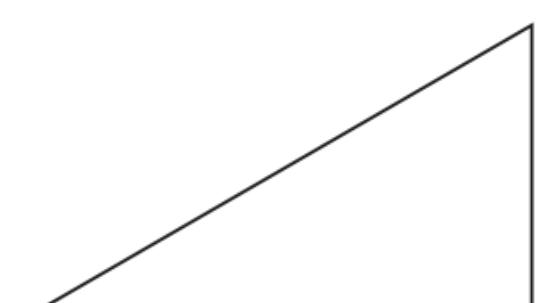
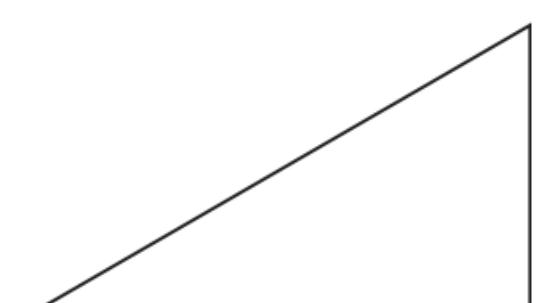
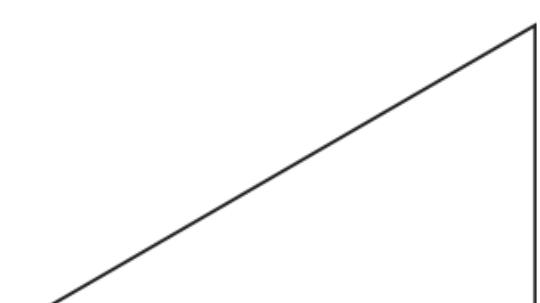
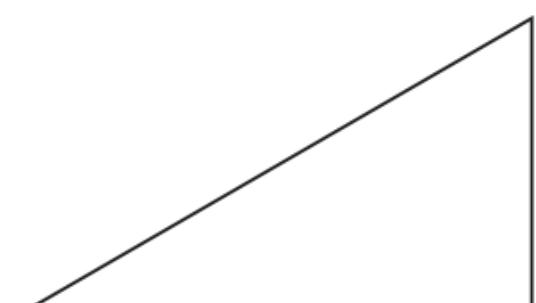
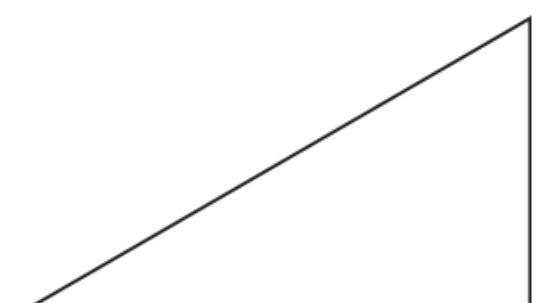
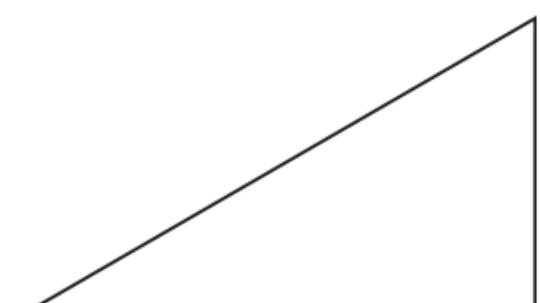
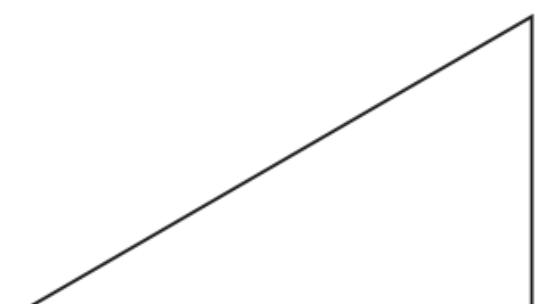
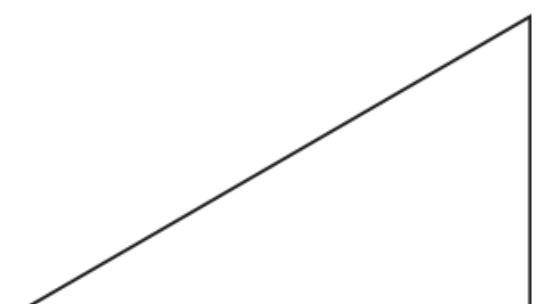
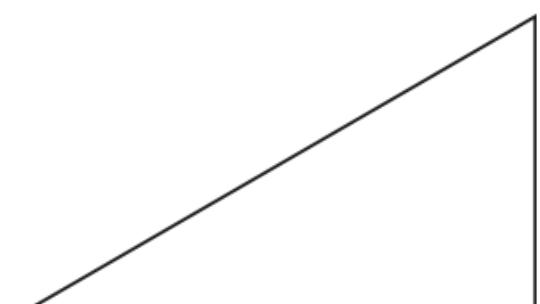
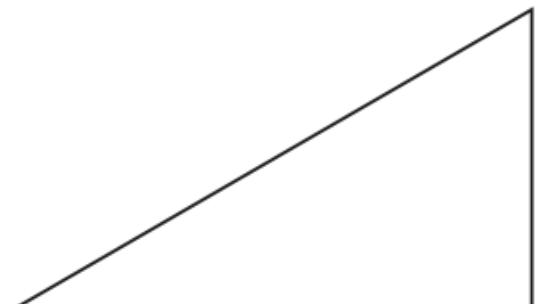
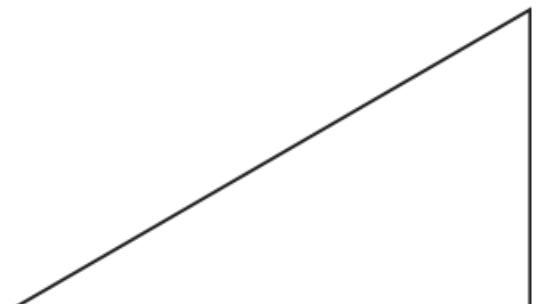
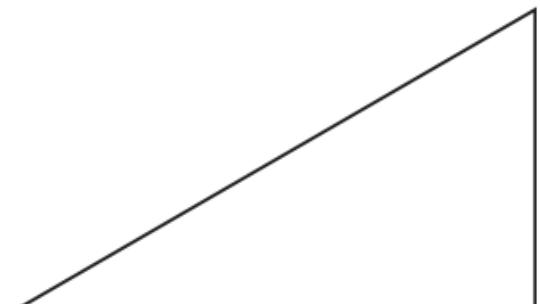
- Identify and create tessellations.
- Describe the transformation that can be used to tessellate a shape.
- Use reflections to determine that a tessellation has symmetry.

~~CUT OUT L 1 2 3 5 6 8 10~~

Tessellations

Use Pattern Blocks instead :)

Carefully cut out these polygons. Form a tessellation using the triangle. Then form a tessellation using the quadrilaterals.



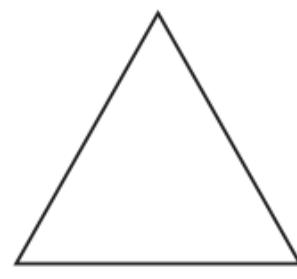
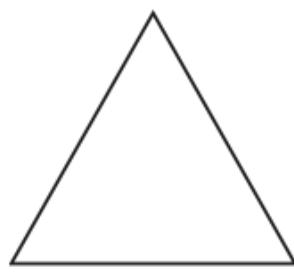
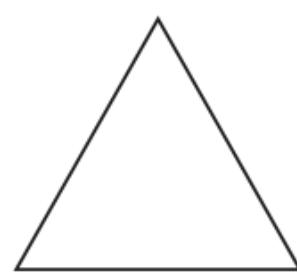
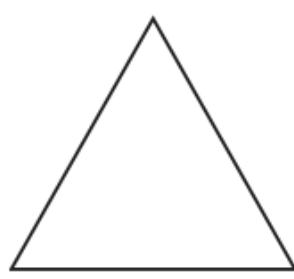
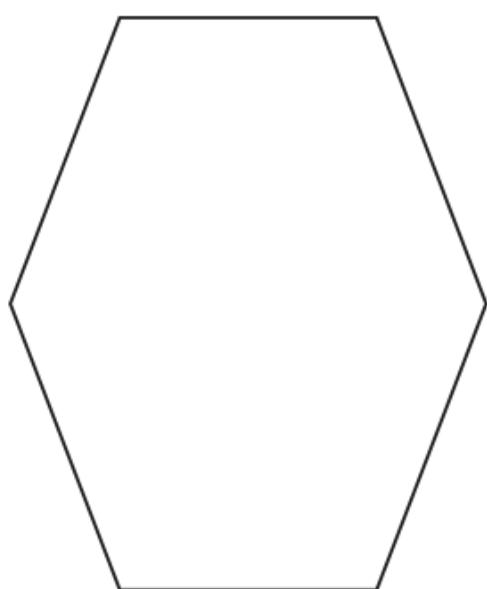
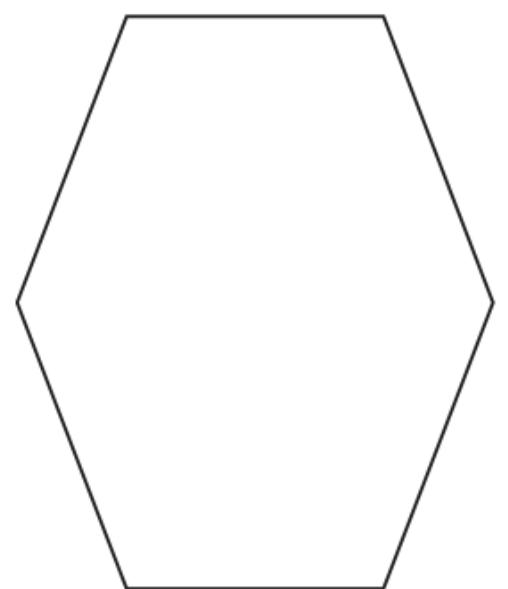
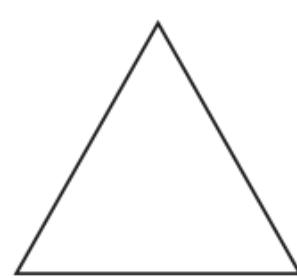
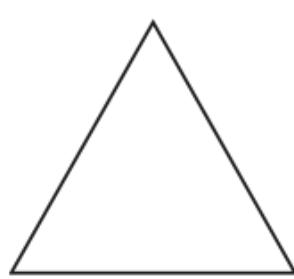
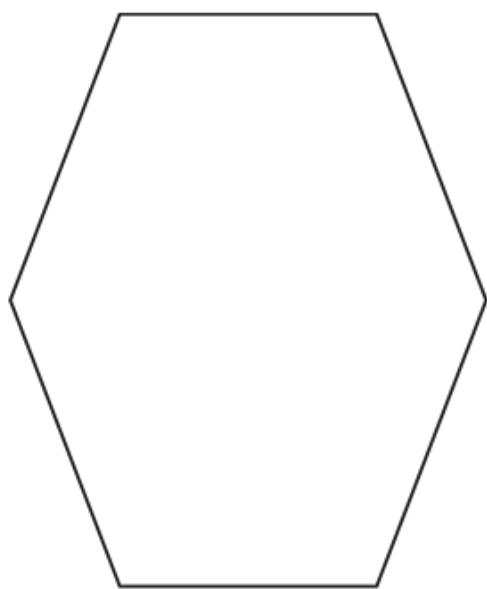
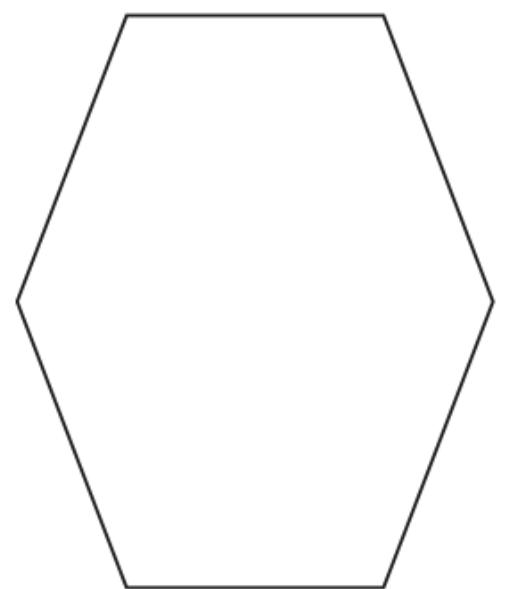
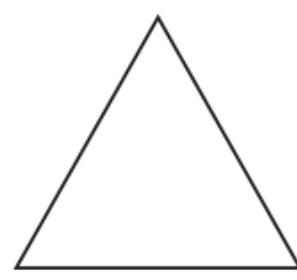
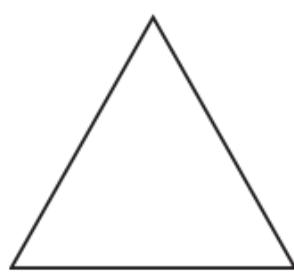
Name _____

Lesson Activity

36

For use with Lesson 82

Tesselations with Multiple Shapes



Power Up

facts

Power Up I

count aloud

Count by fives from 3 to 63.

mental math

Before adding, make one number larger and the other number smaller in **a–e**.

- a. **Number Sense:** $38 + 46$
- b. **Number Sense:** $67 + 24$
- c. **Number Sense:** $44 + 28$
- d. **Number Sense:** $3 \times 50 \times 10$
- e. **Number Sense:** Counting by 5s from 5, every number Julio says ends in 0 or 5. If he counts by 5s from 9, then every number he says ends in which digit?
- f. **Geometry:** The radius of the truck tire was 15 inches. The diameter of the tire was how many inches?
- g. **Estimation:** The total cost for ~~6~~ boxes of snack bars was ~~\$17.70~~. Round this amount to the nearest dollar and then divide by 6 to estimate the cost per box.
- h. **Calculation:** ~~25% of 40, $\times 2$, $\div 10$, $\times 8$, $+ 59$~~
10 20 2 16

518

problem solving

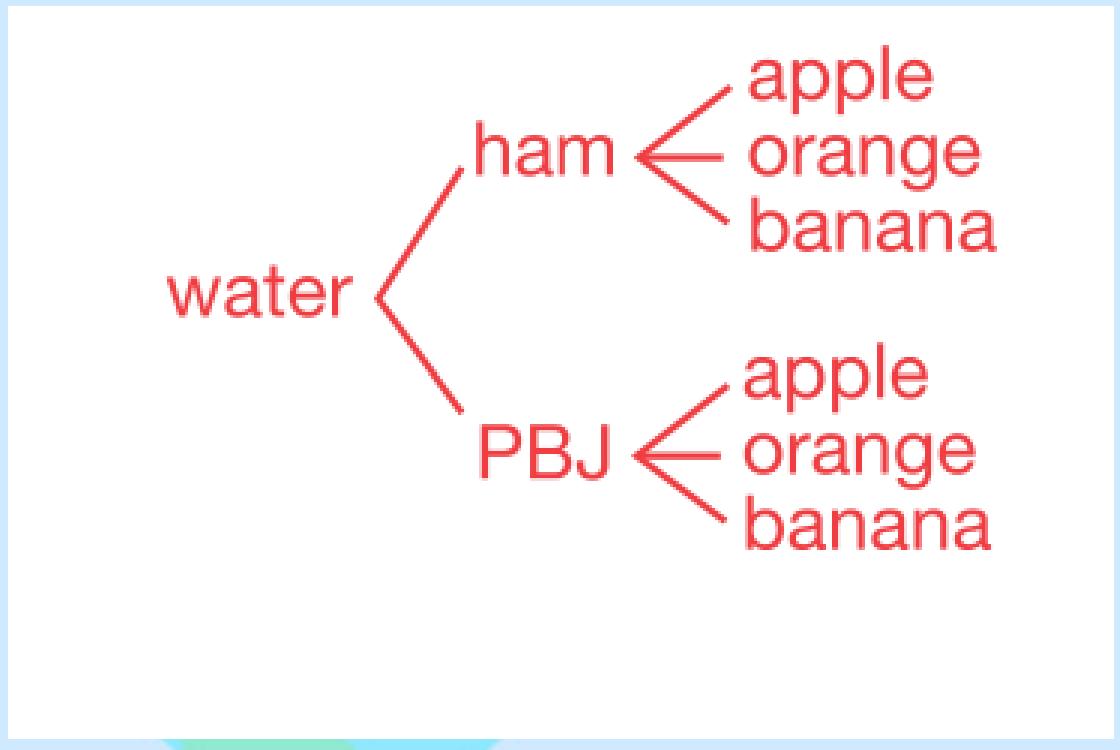
Choose an appropriate problem-solving strategy to solve this problem. Landon is packing a lunch for the park. He will take one bottle of water, a sandwich, and a fruit. He will choose either a ham sandwich or a peanut butter and jelly sandwich. For the fruit, Landon will choose an apple, an orange, or a banana. Make a tree diagram to find the possible combinations of lunches that Landon can pack. Then list each possible combination.

PBJ

H

A O B

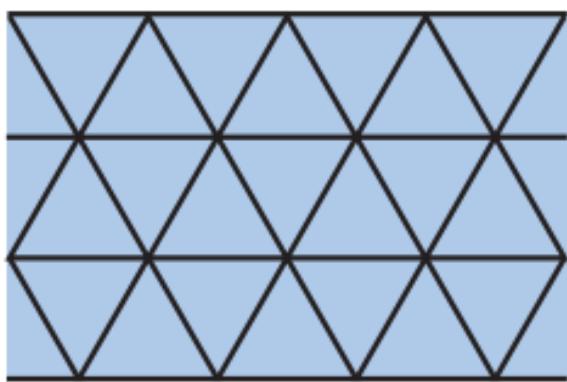
W



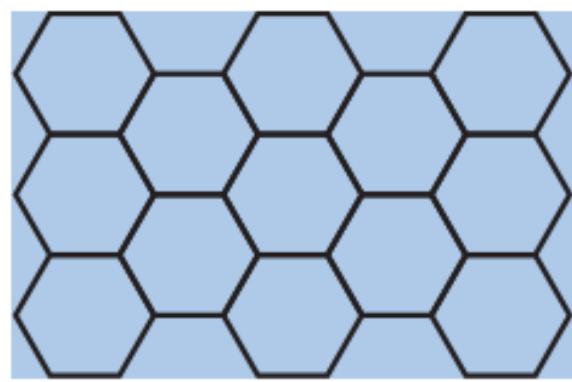
water ← apple
ham ← orange
ham ← banana
PBJ ← apple
PBJ ← orange
PBJ ← banana

New Concept

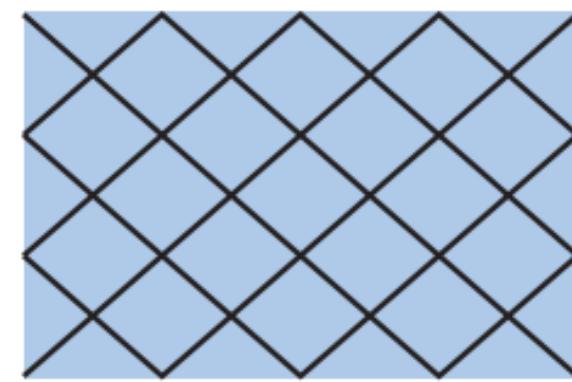
Archeologists have found that people used tiles to make mosaics and to decorate homes and other buildings as long ago as 4000 B.C. The Romans called these tiles *tesselae*, from which we get the word **tessellation**. A tessellation, also called a *tiling*, is the repeated use of shapes to fill a flat surface without gaps or overlaps. Below are examples of tessellations and the name of the shape that produced each one.



triangle



hexagon



quadrilateral

Connect Starting with any tile, how might you move that tile to continue each tessellation above? That is, what transformations can be used to go from one tile to another?



Activity 1

Tessellations

Materials needed:

- **Lesson Activity 35**
 - scissors
 - mirror
1. **Model** Cut out the triangles and quadrilaterals on **Lesson Activity 35**. Then use the figures to form two tessellations: one with the triangles and one with the quadrilaterals. You may want to color the figures before cutting them out and then put them together in a way that creates a colorful design.
 2. **Analyze** Use a mirror to decide if your design has a line of symmetry. If it does, draw the line of symmetry.



Activity 2

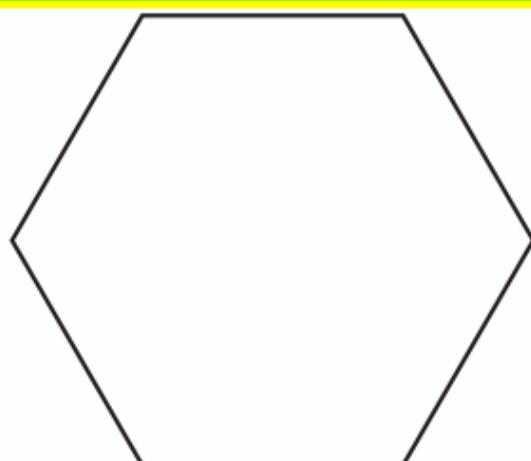
Tessellations With Multiple Shapes

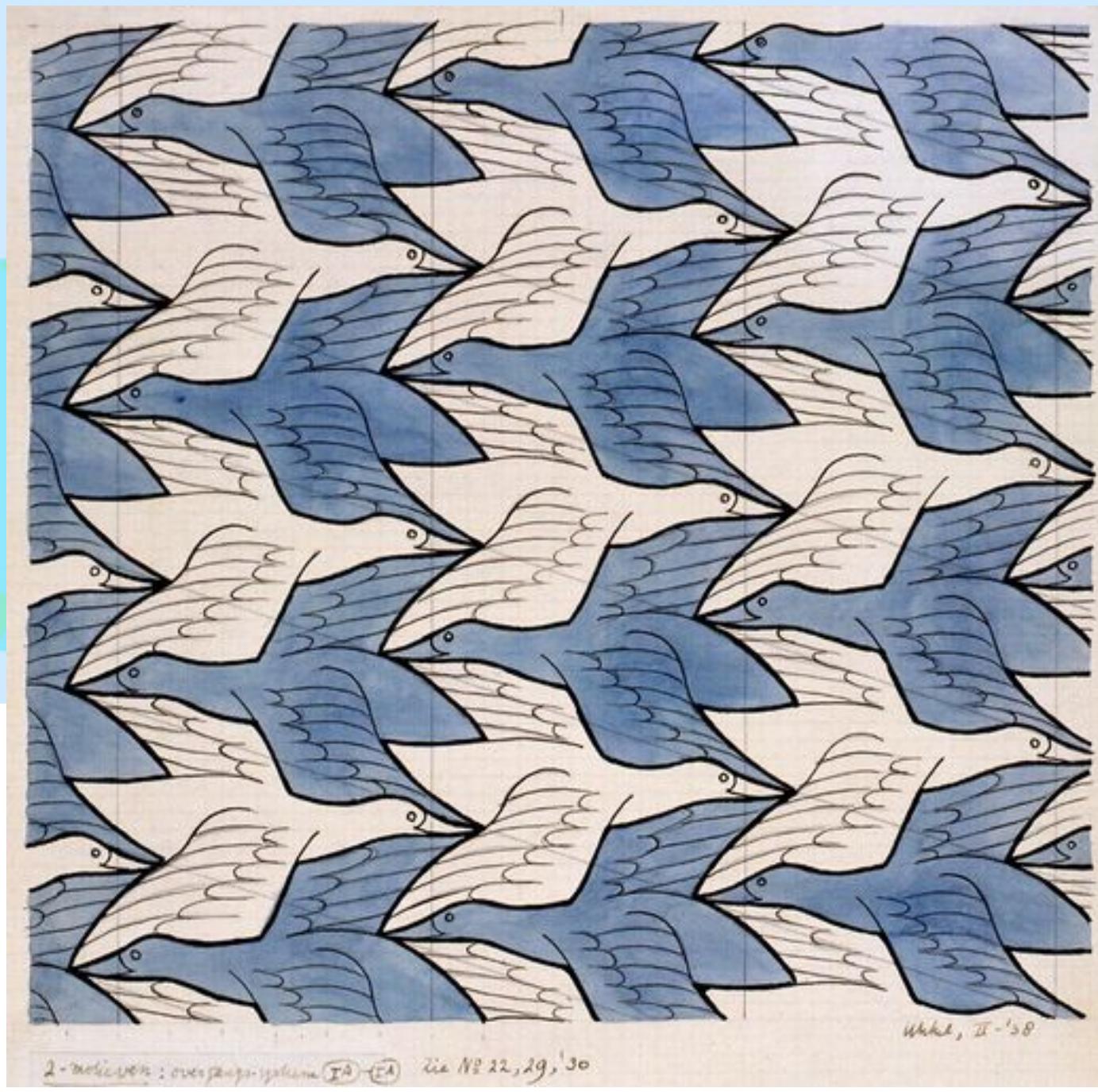
Materials needed:

- **Lesson Activity 36**
- scissors

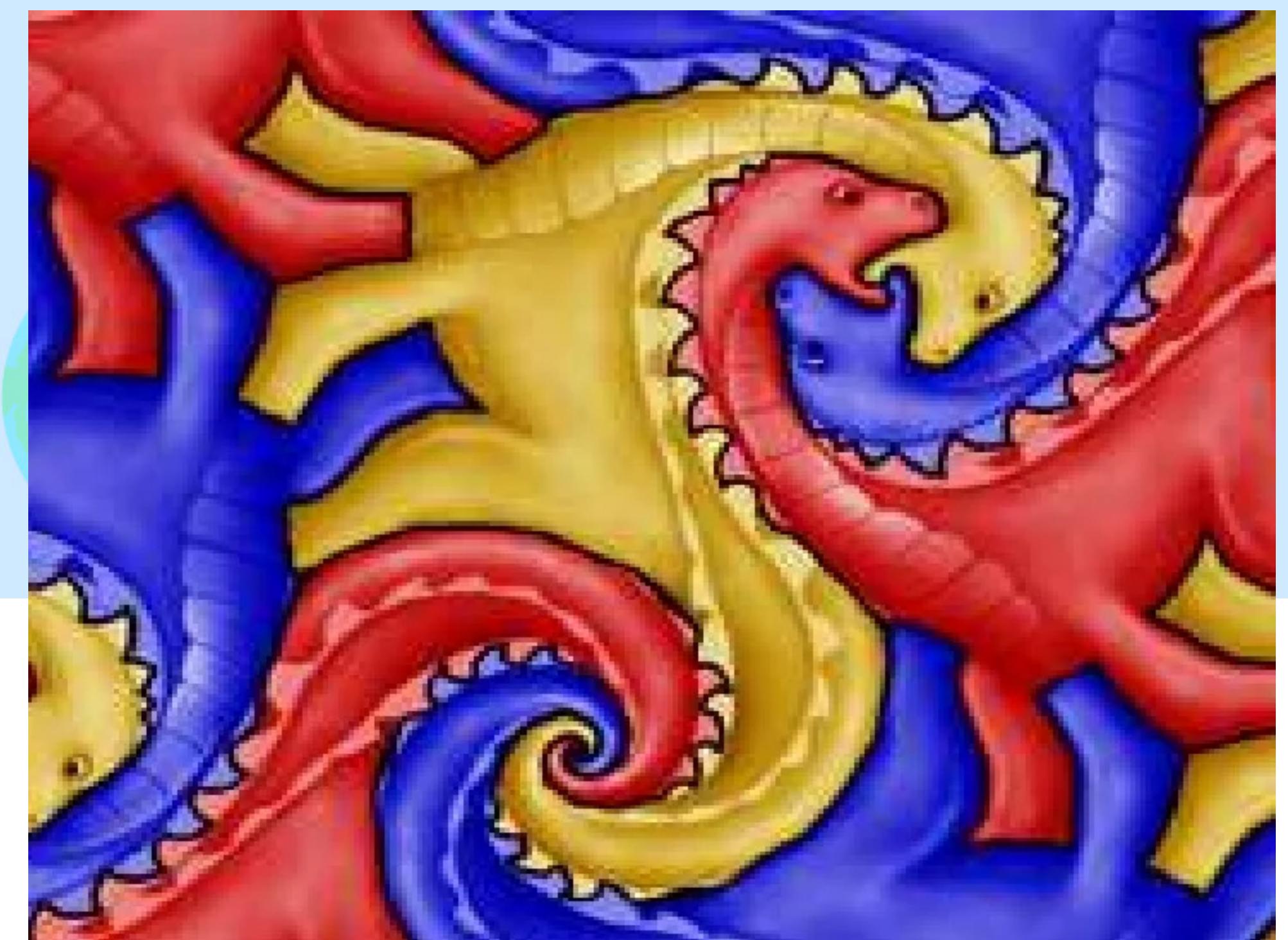
Use **Lesson Activity 36** to cut out the same shapes as those shown below.

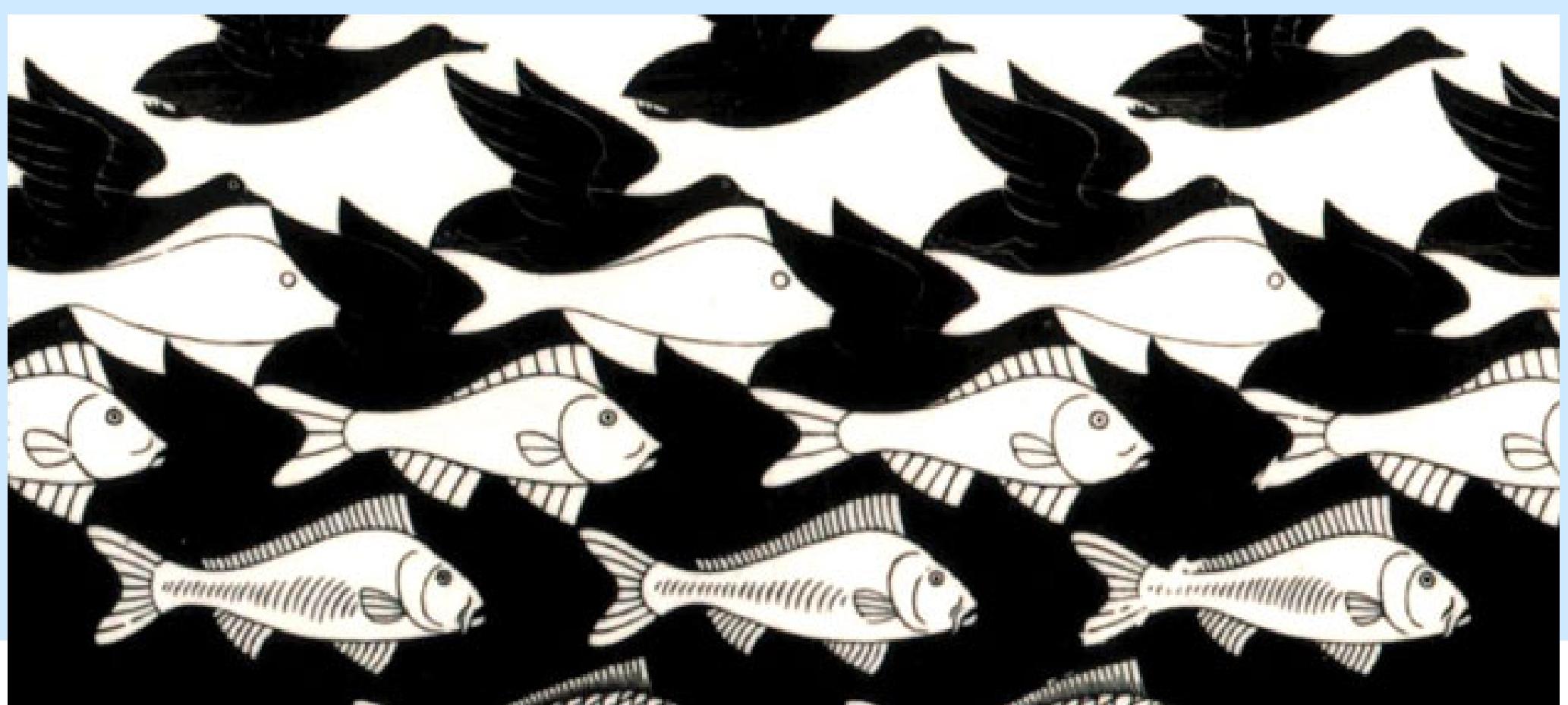
Model Look for pairs of shapes that will tessellate. Make a list to show the combinations of each pair of shapes.





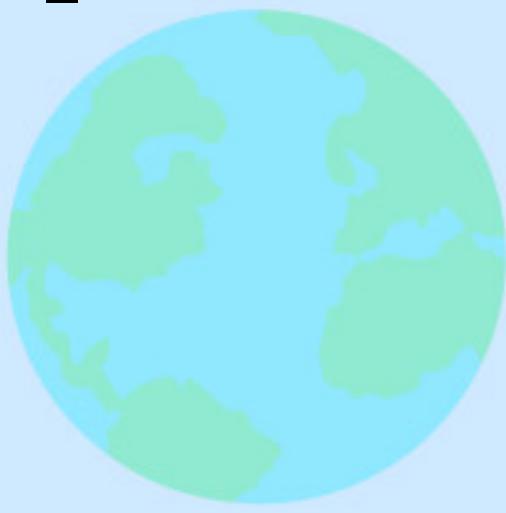
2 - modelle van: overzichts-schilderij TA TCA die N° 22, 29, 30





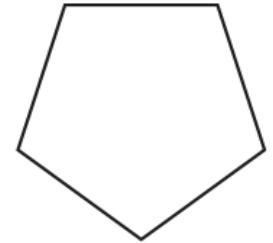


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Lesson Practice

- ▶ a. Trace this figure on your paper a few times, turning your paper as you trace, to show that the figure will fill a flat surface. *See student work.*
- ▶ b. Does this figure tessellate? 



- ▶ c. Look at the three shapes below. Find pairs of shapes that will tessellate. Make a list to show the combinations of each pair of shapes. 

