1-2: Learning Goals

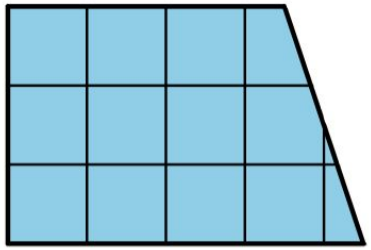
- Let’s create shapes and find their areas.

1-2-1: What Is Area?

You may recall that the term **area** tells us something about the number of squares inside a two-dimensional shape.

1. Here are four drawings that each show squares inside a shape. Select **all** drawings whose squares could be used to find the area of the shape. Be prepared to explain your reasoning.

A



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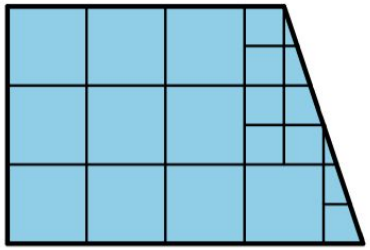
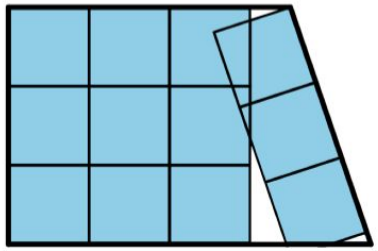


C



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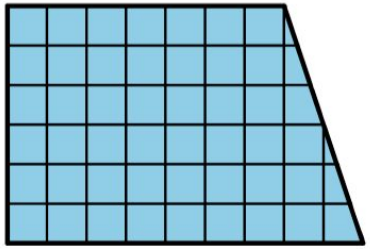
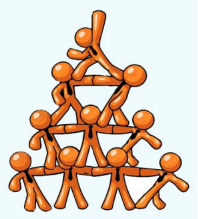


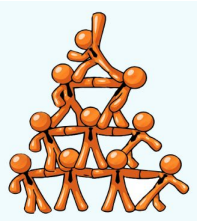
2. Write a definition of area that includes all the information that you think is important.



1-2-2: Composing Shapes

Your teacher will give you one square and some small, medium, and large right triangles. The area of the square is 1 square unit.

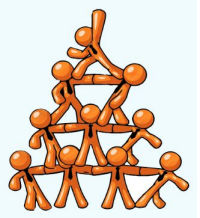
1. Notice that you can put together two small triangles to make a square. What is the area of the square composed of two small triangles? Be prepared to explain your reasoning.
2. Use your shapes to create a new shape with an area of 1 square unit that is not a square. Trace your shape.
3. Use your shapes to create a new shape with an area of 2 square units. Trace your shape.
4. Use your shapes to create a *different* shape with an area of 2 square units. Trace your shape.
5. Use your shapes to create a new shape with an area of 4 square units. Trace your shape.



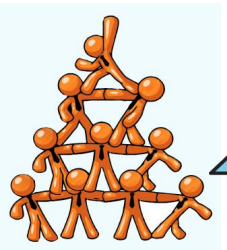
1-2-3: Tangram Triangles

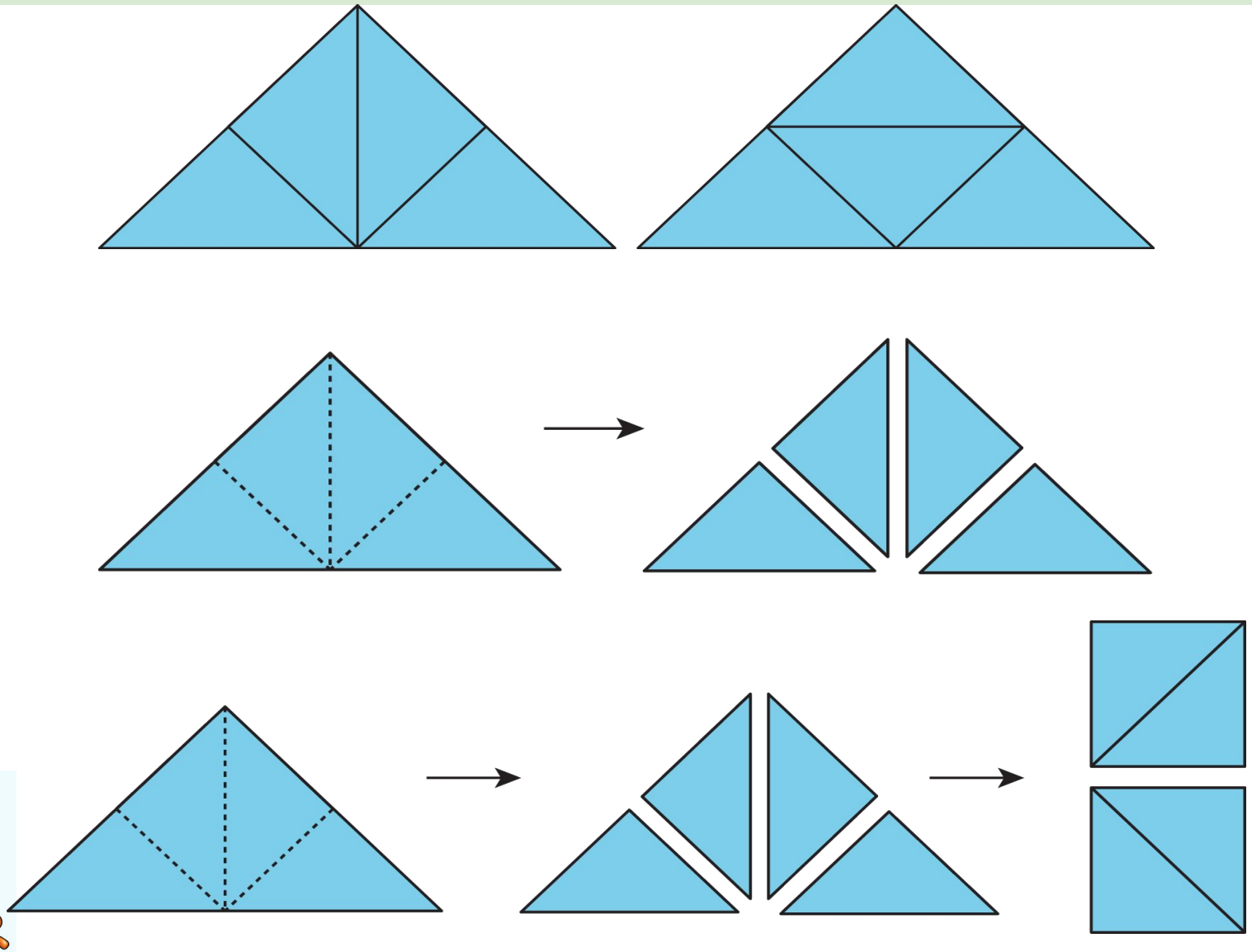
Recall that the area of the square you saw earlier is 1 square unit. Complete each statement and explain your reasoning.

1. The area of the small triangle is _____ square units. I know this because . . .
2. The area of the medium triangle is _____ square units. I know this because . . .
3. The area of the large triangle is _____ square units. I know this because . . .



1-2: Lesson Synthesis

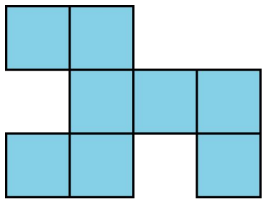




1-2: area

The area of a two-dimensional region, measured in square units, is the number of unit squares that cover the region without gaps or overlaps.

The side length of each square is 1 centimeter. The area of the shaded region A is 8 square centimeters. The area of shaded region B is ½ square centimeters.



A

B

1-2: rearrange

When we decompose a figure into pieces and put them back together in a different way, we are rearranging the pieces.

1-2: compose/decompose

Compose means "put together" and decompose means "take apart." We use the word "compose" to describe putting several geometric figures together to make a new figure.

1-2: Learning Targets

- I know what it means for two figures to have the same area.
- I can explain how to find the area of a figure that is composed of other shapes.
- I know how to find the area of a figure by decomposing it and rearranging the parts.

1-2-4: Tangram Rectangle

The square in the middle has an area of 1 square unit. What is the area of the entire rectangle in square units? Explain your reasoning.