

## Activity 2: Relationships in Science

Name \_\_\_\_\_

Date \_\_\_\_\_

Class \_\_\_\_\_

### Part 1

1. Some students were interested in how a baby's weight changed with the baby's age. They asked five mothers in their neighborhood for the weight and age of their babies. Here is the information about the babies that they recorded:

<b>Julia</b>	<b>8 months</b>	<b>16 lb.</b>
<b>Matthew</b>	<b>5.5 months</b>	<b>13 lb.</b>
<b>Zoe</b>	<b>1 year (exactly)</b>	<b>21 lb.</b>
<b>Destry</b>	<b>1 month</b>	<b>8.5 lb.</b>
<b>Yadisa</b>	<b>3 months</b>	<b>11 lb.</b>

- a) In Table 1 below, list the babies from youngest to oldest, then record each of their ages and weights.

Table: Baby's Age and Weight		
Baby's Name	Baby's Age (months)	Baby's Weight (pounds)

- b) What can the students conclude from this data?  
*For these five babies, as the baby's age increases,* \_\_\_\_\_
- c) Suppose the students had collected data from five additional mothers. Do you think their conclusion would remain the same? Why do you think so?

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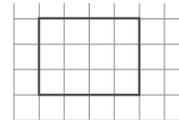


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2. The *surface area* of a figure is defined as the number of unit squares that cover the surface. So by counting the squares, you can see that the example figure at right has an area of 12 square units.



The *perimeter* of a figure is defined as the total length all the way around a figure. The example has a total perimeter of  $4 + 3 + 4 + 3 = 14$  units.

What, if any, is the relationship between the area and the perimeter of rectangular figures? Complete the exercises below to determine the answer to this question.

- a) Measure (by counting) the area and perimeter of each figure to the right. Record your measurements in the table below.

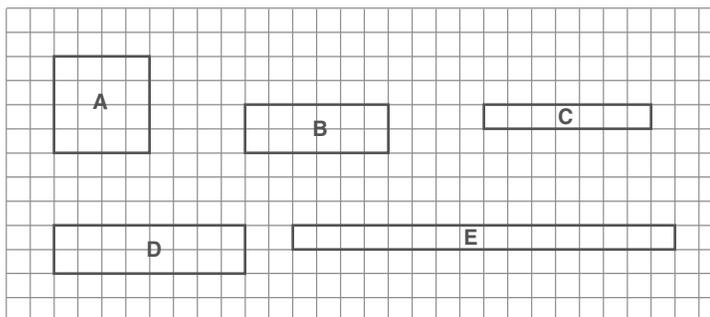


Table: Area and Perimeter		
Figure	Area (square units)	Perimeter (units)
Example		
A		
B		
C		
D		
E		

- b) Based on your results, is there a relationship between the area and perimeter of a figure? (Yes or No) \_\_\_\_\_

If you think there *is* a relationship, complete the following sentence using the terms *increases* (gets larger) or *decreases* (gets smaller).

For these figures, as the area \_\_\_\_\_, the perimeter \_\_\_\_\_.

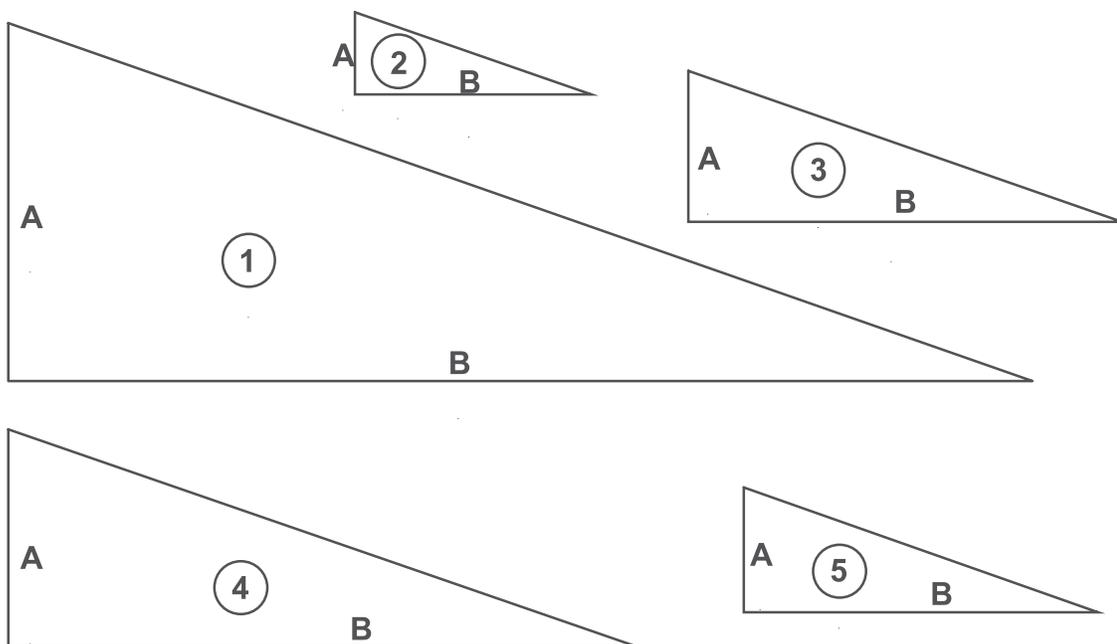
If you think there *is not* a relationship, complete the sentence below with the two variables:

For these rectangular figures, there is no relationship between \_\_\_\_\_ and \_\_\_\_\_.

**Part 2**

1. The diagrams below show five triangles. After making some measurements with a ruler, you will answer this question:

*What, if any, is the relationship between the length of side A and the length of side B of these triangles?*



- a) Use a centimeter ruler to measure the sides of each triangle and record your measurements in the table below.

Table: Lengths of Sides A and B		
Figure	Length of Side A (cm)	Length of Side B (cm)
1		
2		
3		
4		
5		

b) Based on your measurements, do you think there is a relationship between the lengths of sides A and B? (*Yes* or *No*) \_\_\_\_\_

If you think there is a relationship, complete the following sentence, filling in the blanks with either *increases* (gets larger) or *decreases* (gets smaller).

*For these triangles, as the length of side A \_\_\_\_\_, the length of side B \_\_\_\_\_.*

If you think there is no relationship, complete the sentence below with the two variables:

*For these triangles, there is no relationship between \_\_\_\_\_ and \_\_\_\_\_.*