

# CW - Shrinking Squares

NAME \_\_\_\_\_

- Place your paper square below, and trace around the square. Lay out 4 spaghetti pieces around the edges of your square.

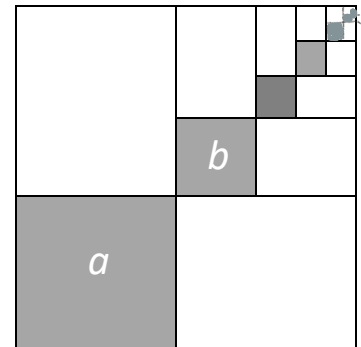
- The area of your square is 1 square unit (1x1). What is the perimeter of your square? \_\_\_\_\_
- Fold the patty paper twice, into fourths. Use the spaghetti pieces to find the perimeter of your new quarter-square. (square "a" at right)
- Draw the quarters onto the square above, and shade in  $\frac{1}{4}$ .

Perimeter = \_\_\_\_\_

- What is the AREA of your new square? \_\_\_\_\_
- Fold the patty paper twice again, into sixteenths. Use the spaghetti pieces to find the perimeter of your new square. (like square "b" at right)

Perimeter = \_\_\_\_\_

- What is the AREA of your new square? \_\_\_\_\_

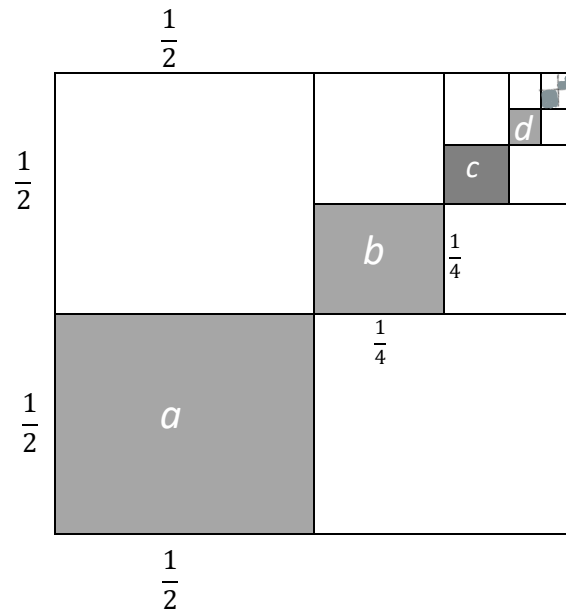


# Shrinking Squares

Start with a square of sides = 1.  
Consider the shaded squares.

What is the perimeter of each shaded square?

What is the area of each shaded square?



	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
Perimeter							
Area							

1. Discuss the different patterns you can find in the diagram.

- Perimeter

- Area

2. Suppose you figure out the next square. What is the perimeter of square  $h$  ? Show how you figured it out.

3. What is the area of square  $h$  ? Show how you figured it out.

**CHALLENGE:**

4. How can you find the AREA of the **20<sup>th</sup>** shaded square without having to find all of the ones before it? You don't have to calculate it completely. If you like, just explain what multiplication problem you would use to find the denominator.