Enrichment Packet #21

Due: Monday

NAME: _____

Name _____

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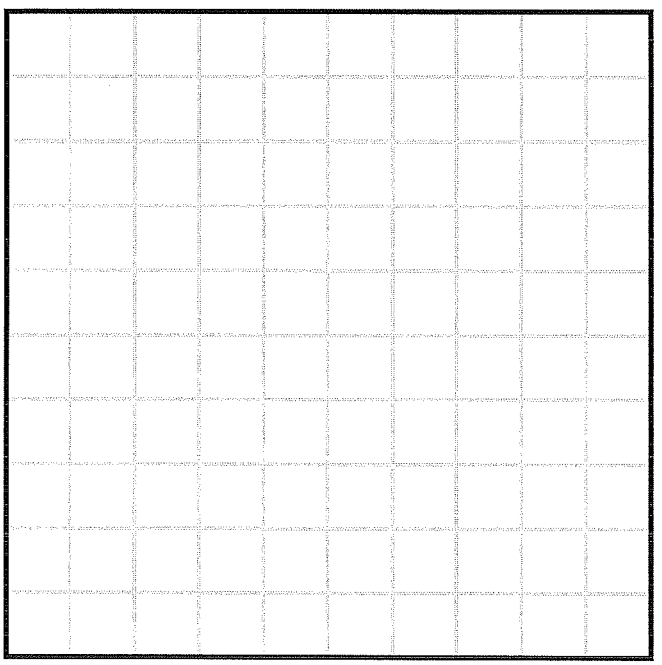
14-1

A Square Mosaic

Mental Math

On the grid below make a 3-colored design so that:

- One fifth of the squares are colored blue.
- 2.5 times more squares are colored red than blue
- 1.5 times more squares are colored yellow than blue.



Write the area covered by your design:

Blue: _____ square units

Red: _____ square units

Yellow: _____ square units

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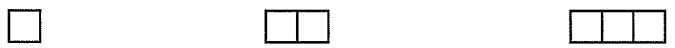
Perimeter Patterns

Patterns

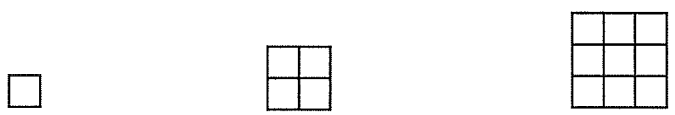
Draw the next figure in each pattern. Find the perimeter in units for each figure.

1.



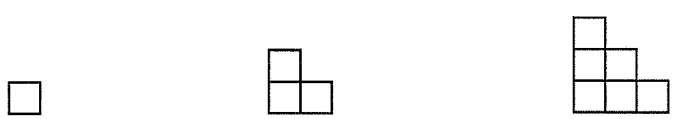
p = _____ p = _____ p = _____ p = _____

2.



p = _____ p = _____ p = _____ p = _____

3.



p = _____ p = _____ p = _____ p = _____

4. What pattern do you see in the perimeters for the figures in

a. Exercise 1? _____

b. Exercise 2? _____

c. Exercise 3? _____

5. If the patterns in Exercises **1** through **3** continue, what will the perimeters of each of the fifth figures be? Draw each fifth figure to check.

_____, _____, _____

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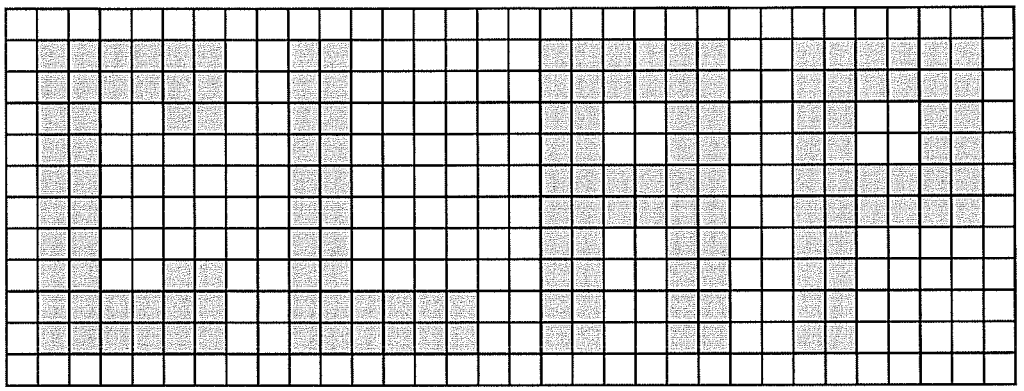
Applause

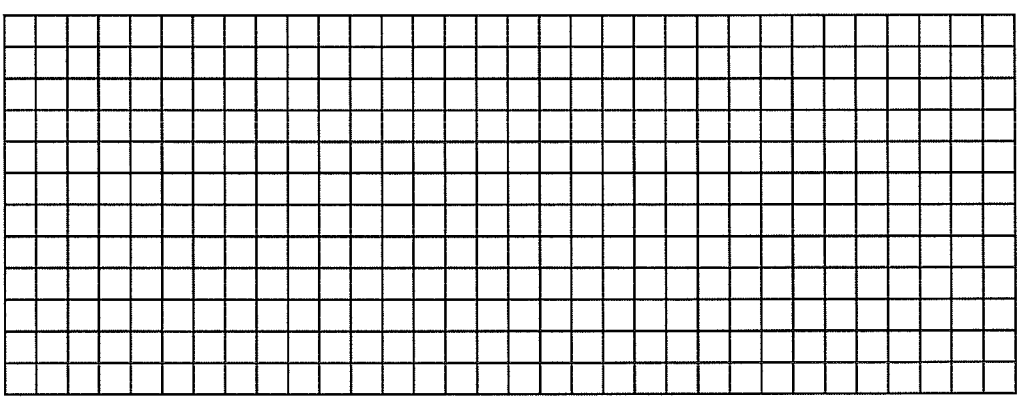
Visual Thinking



1. Complete the table below by writing the perimeters and areas of the block letters. (Hint: You can break the areas into smaller parts.)

Letter	Perimeter	Area
C		
L		
A		
P		

2. Draw your initials in block letters on the grid below and find the perimeter and area of each letter.



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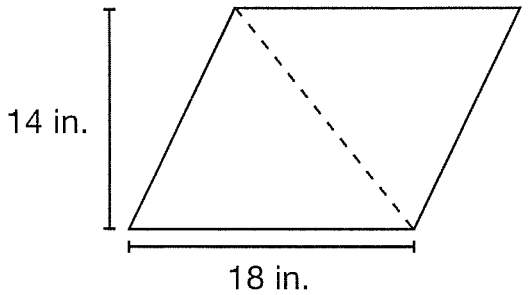
Kite Patterns

Reasoning

Bobby builds a kite in the shape of a parallelogram, pictured below. The length of the base is 18 inches and the height is 14 inches.



1. How many square inches of nylon did Bobby use?

_____

2. Nicole builds a kite with the same height as Bobby's kite. The length of the base of her kite is 2 inches shorter. What is the area of Nicole's kite?

_____

3. How much smaller is Nicole's kite?

_____

4. Nancy builds a kite with a height that is 2 inches shorter than Bobby's kite. The length of the base of Nancy's kite is equal to the length of the base of Bobby's kite. What is the area of Nancy's kite?

_____

5. Whose kite is smaller, Nicole's or Nancy's?

_____

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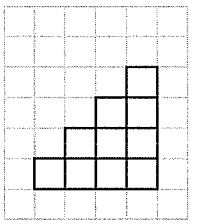
Carl Friedrich Gauss

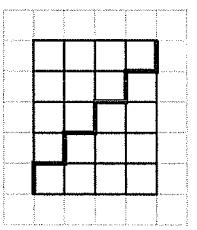
Patterns

Carl Friedrich Gauss was a brilliant mathematician. According to his biographer, when Gauss was a young student he was asked to add up the numbers 1 to 100. He got the answer quickly using patterns. He realized when adding 100 and 1, 99 and 2, 98 and 3, and so on they all added up to 101.

You can do the same thing by using area. If you line up sticks of heights 1, 2, 3, and 4 in order, you get a shape that is almost triangular.



If you make a second copy of the shape and match it to the first you get a rectangle. This is like making a parallelogram with two copies of a triangle.



1. What is the area of the first figure? _____

2. What is the area of the second figure? _____

3. What is the area of the first figure if there were 6 rows? _____

4. What if there were 14 rows? What would the area of the triangular figure be? _____

   Hint: Think how you can use the rectangles.

5. What is the area of the triangular figure with 100 rows? _____