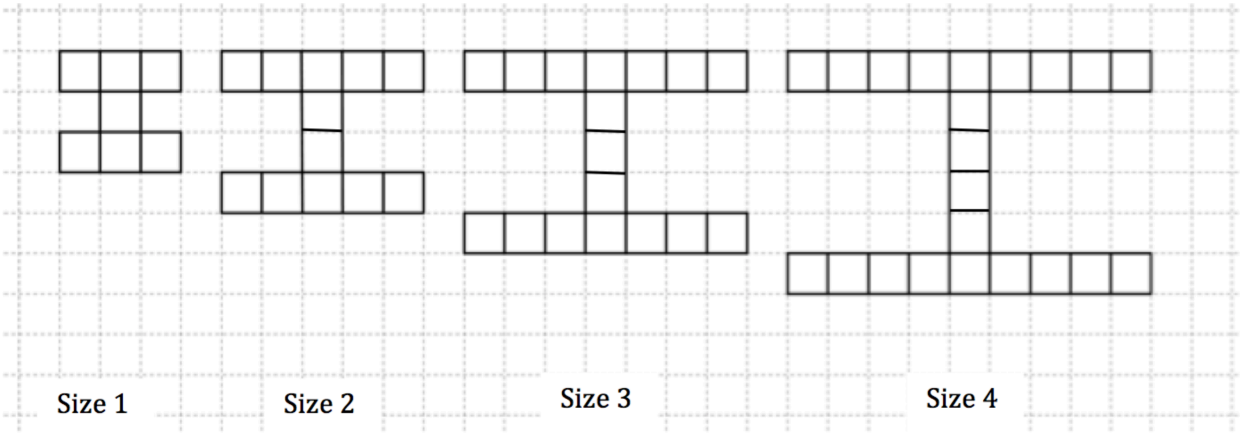


# 1.2 I Rule!

## *A Solidify Understanding Task*

Marco has started a new blog about sports at Imagination High School (mascot: the fighting unicorns) that he has decided to call "I Site". He created a logo for the web site that looks like this:

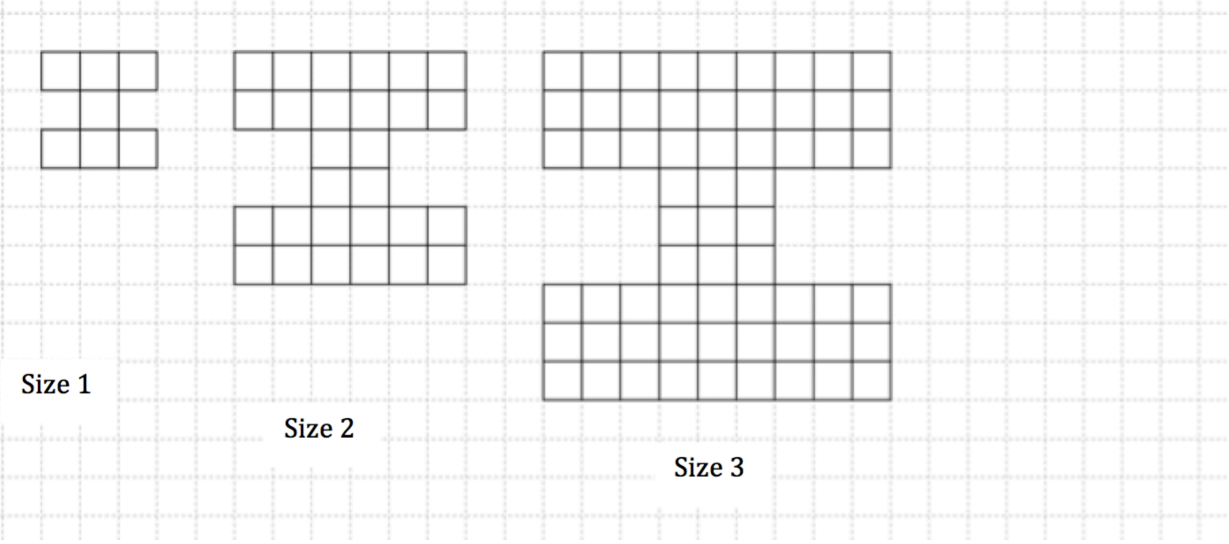

He is working on creating the logo in various sizes to be placed on different pages on the website. Marco developed the following designs:



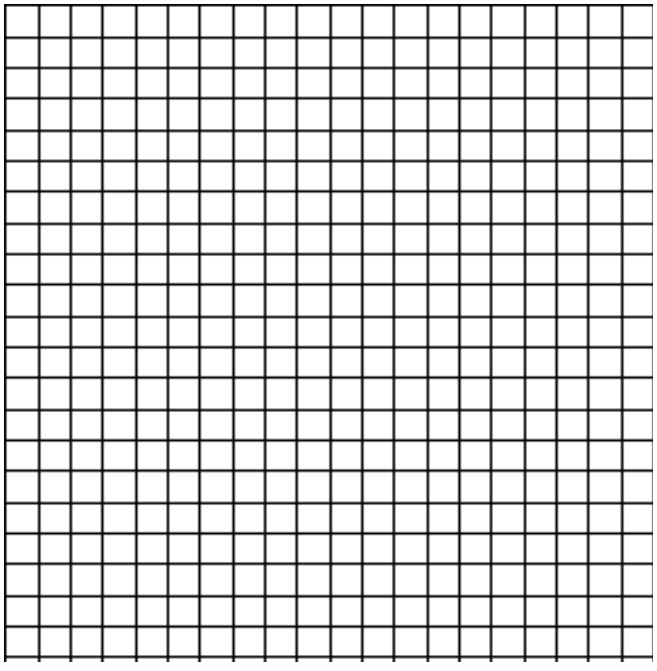

1. How many squares will be needed to create the size 100 logo?

2. Develop a mathematical model for the number of squares in the logo for size *n*.

Marco decides to experiment with making his logo "blockier" so that it looks stronger. Here's what he came up with:




3. Assuming that Marco continues with the pattern as it has begun, draw the next figure, size 4, and find the number of blocks in the figure.



4. Develop a mathematical model for the number of blocks in a logo of size $n$.

5. Compare the models that you developed for the first set of logos to the second set of logos. In what ways are they similar? In what ways are they different?

READY, SET, GO! Name Period Date

## READY

Topic: Distributive Property

**Simplify. First use the distributive property and then combine the like terms.**

Example:

$$\mathbf{3x(4x+1)+2(4x+1)} \rightarrow \mathbf{(12x^2+3x)+(8x+2)} \rightarrow \mathbf{12x^2+[3x+8x]+2} \rightarrow \underbrace{\mathbf{12x^2+11x+2}}_{\text{Simplified form}}$$

(like terms)

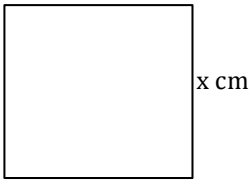
1. $2x(5x+3)+7(5x+3)$
2. $8x(x+1)+2(x+1)$
3. $6x(x-10)-1(x-10)$
4. $1x(3x+4)+5(3x+4)$
5. $3x(8x+3)-4(8x+3)$
6. $5x(2x+6)+2(2\mathbf{x}+6)$
7. $7x(-5x+2)-13(-5x+2)$
8. $-4x(12x+3)+3(12x+3)$

## SET

Topic: Comparing Area and perimeter

**Calculate the area and perimeter of each figure below. The area may be written as a product. Include the correct unit on your answer. (Your answers will contain a variable.)**

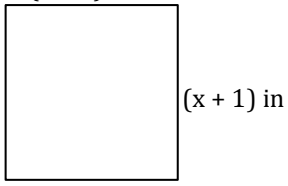
9.




a. Perimeter: _____

b. Area: _____

10.




a. Perimeter: _____

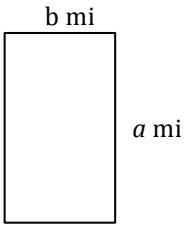
b. Area: _____

11.


a. Perimeter: _____

b. Area: _____

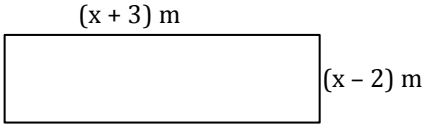
12.




a. Perimeter: _____

b. Area: _____

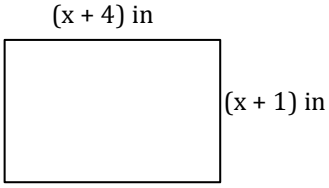
13.




a. Perimeter: _____

b. Area: _____

14.




a. Perimeter: _____

b. Area: _____

15. Compare the perimeter to the area in each of problems (9-14).
In what way are the numbers and units in the perimeters and areas different?

## GO

Topic: Greatest Common Factor

Find the GCF for the given terms.

16. $15abc^2$ and $25a^3bc$

17. $12x^5y$ and $32x^6y$

18. $17pqr$ and $51pqr^3$

19. $7x^2$ and $21x$

20. $6x^2$, $18x$, and $-12$

21. $4x^2$ and $9x$

22. $11x^2y^2$, $33x^2y$, and $3xy^2$

23. $16a^2b$, $24ab$, and $16b$

24. $49s^2t^2$ and $36s^2t^2$