A

Tile Pattern Team Challenge

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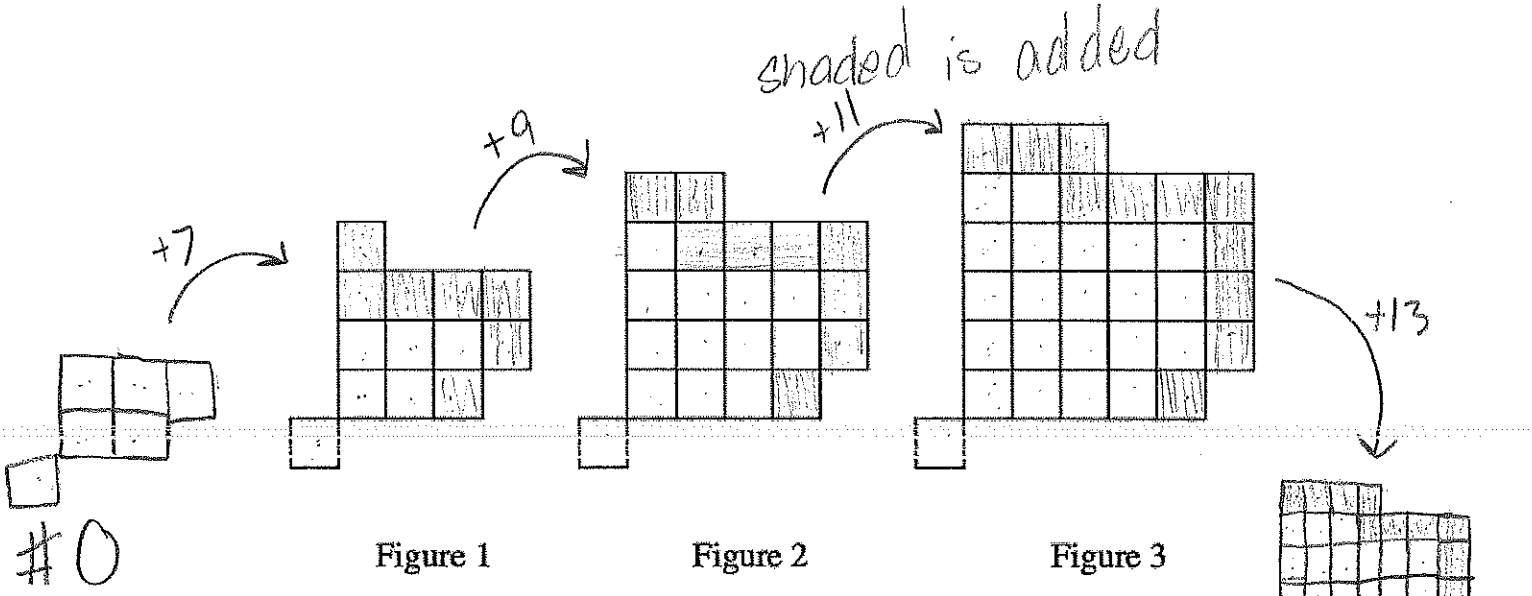


Figure 1 Figure 2 Figure 3

Pattern Analysis:

Extend the pattern: Draw Figures 0, 4, and 5. Then describe Figure 100. Give as much information as you can. What will it look like? How will the tiles be arranged? How many tiles will it have?

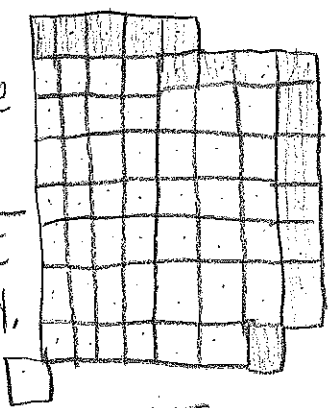
X	Y
0	6
1	13
2	22
3	33
4	46
5	61

$y = 1^2 + 6(1) + 6$
$y = 1 + 6 + 6$
$y = 13$
$y = 2^2 + 6(2) + 6$
$y = 4 + 12 + 6$
$y = 22$
$y = 3^2 + 6(3) + 6$
$y = 9 + 18 + 6$
$y = 33$

I drew the 3 squares then filled in the table. Then I just guessed and checked until I found the equation. Then I plugged in 100 for x and solved.

$y = x^2 + 6x + 6$

Figure 100 would be 10,606 blocks



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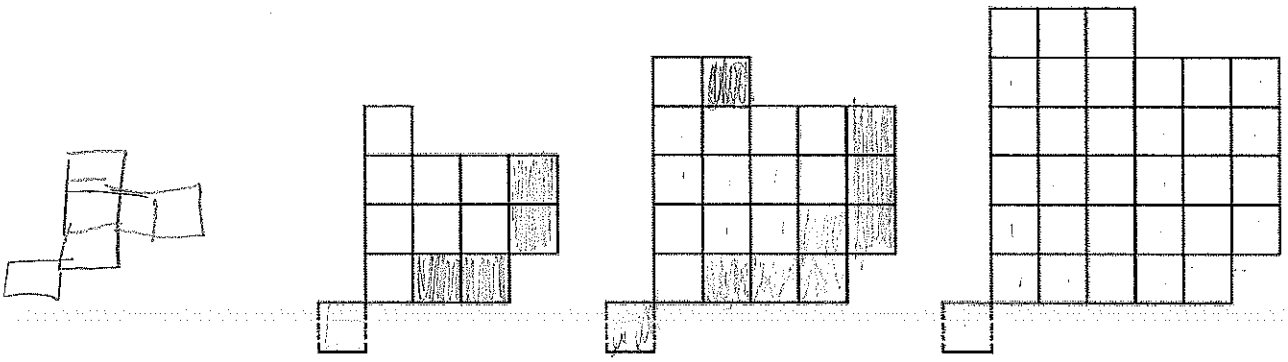

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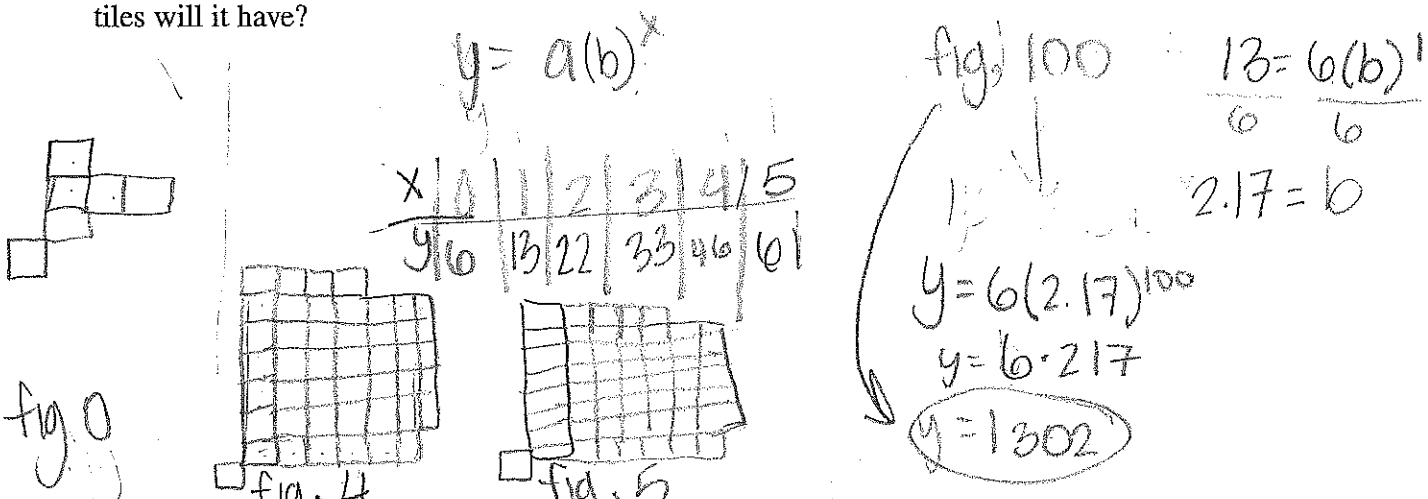

Jensen Koch

C

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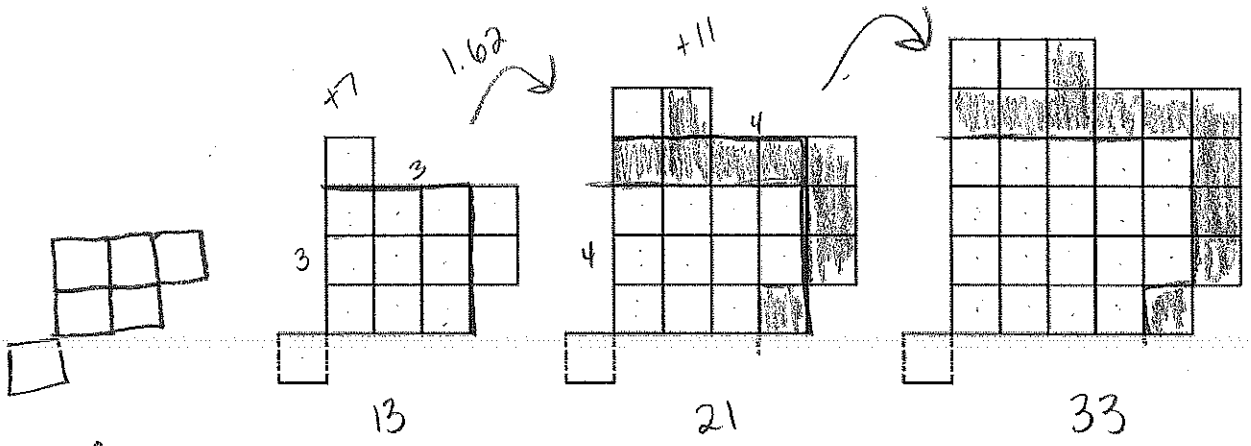

#0 **Figure 1** **Figure 2** **Figure 3**

Perfect square in the middle is 2 more than figure #. The top section is 2 less than the side for the square. The side section is 1 less than the the side of the square.

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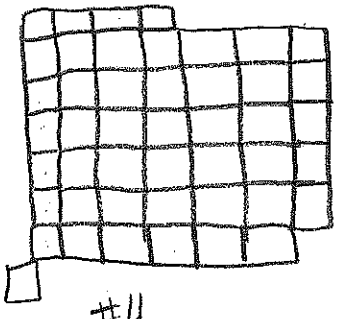
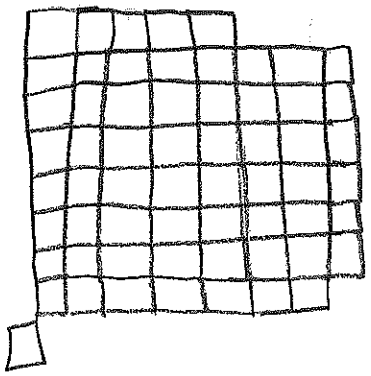


#4



#5

The center square for figure 100 would be a 102·102. The top section would be 98 and the side section would be 99. Then you just have the one extra. Total tiles in figure 100:

10602 tiles.

D

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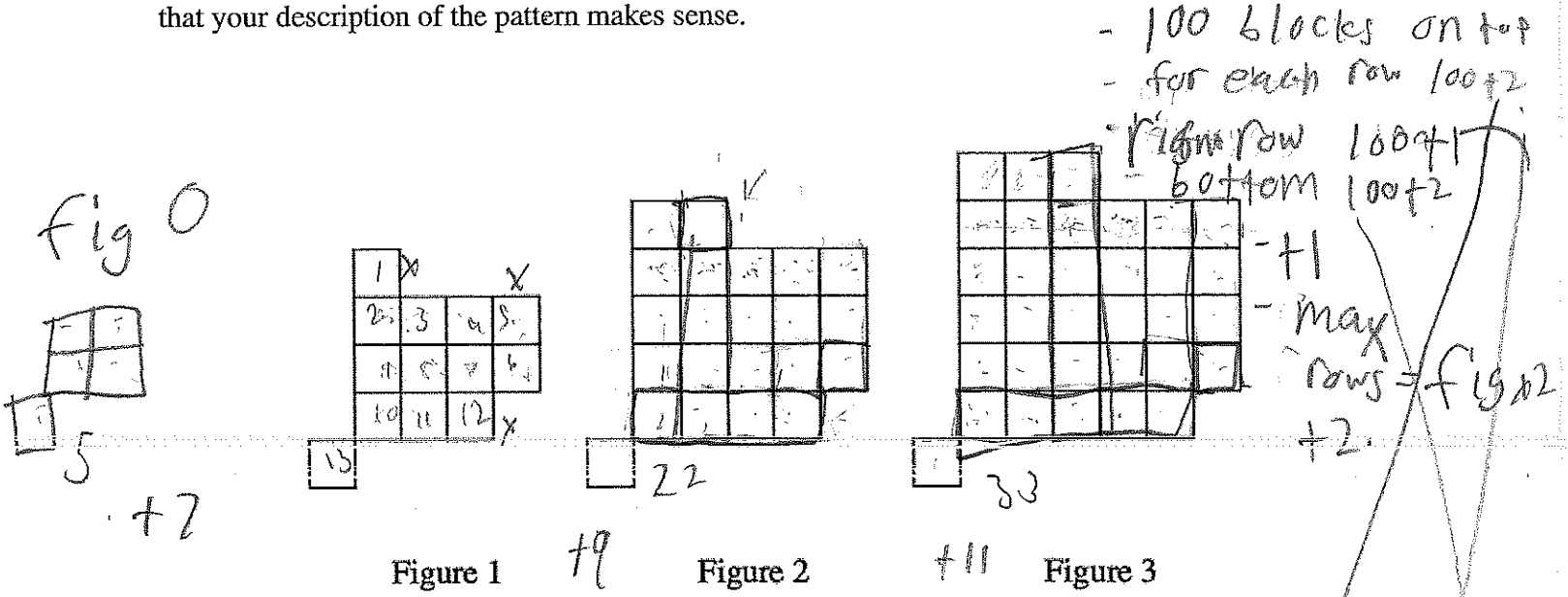

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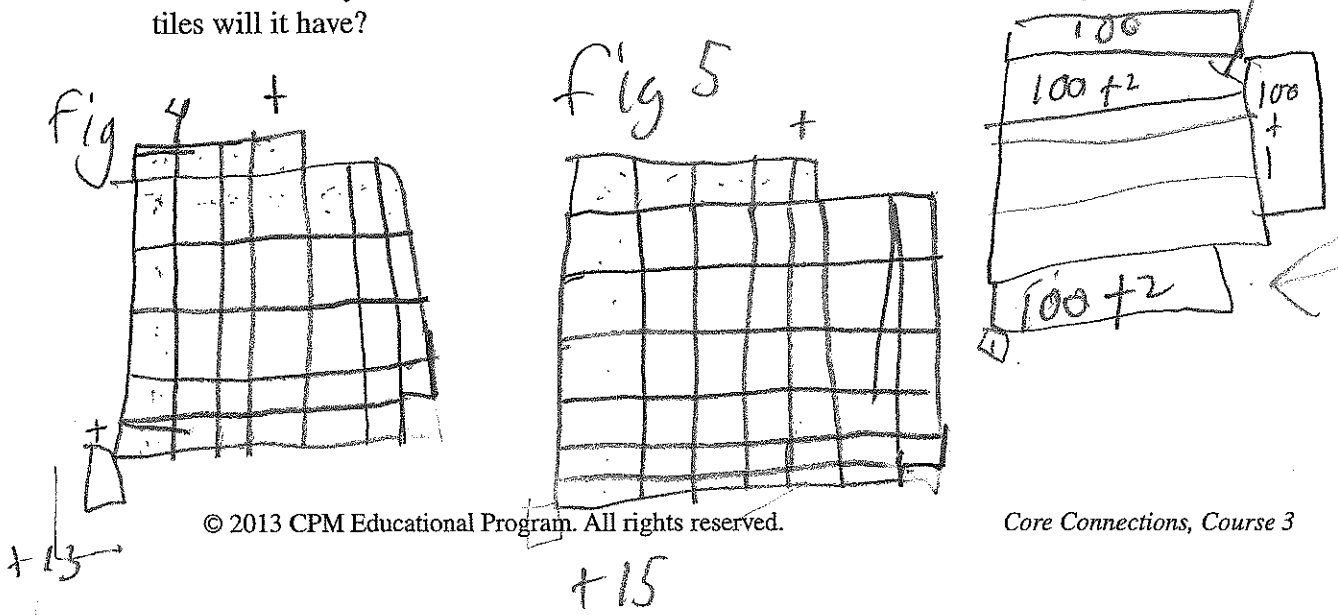

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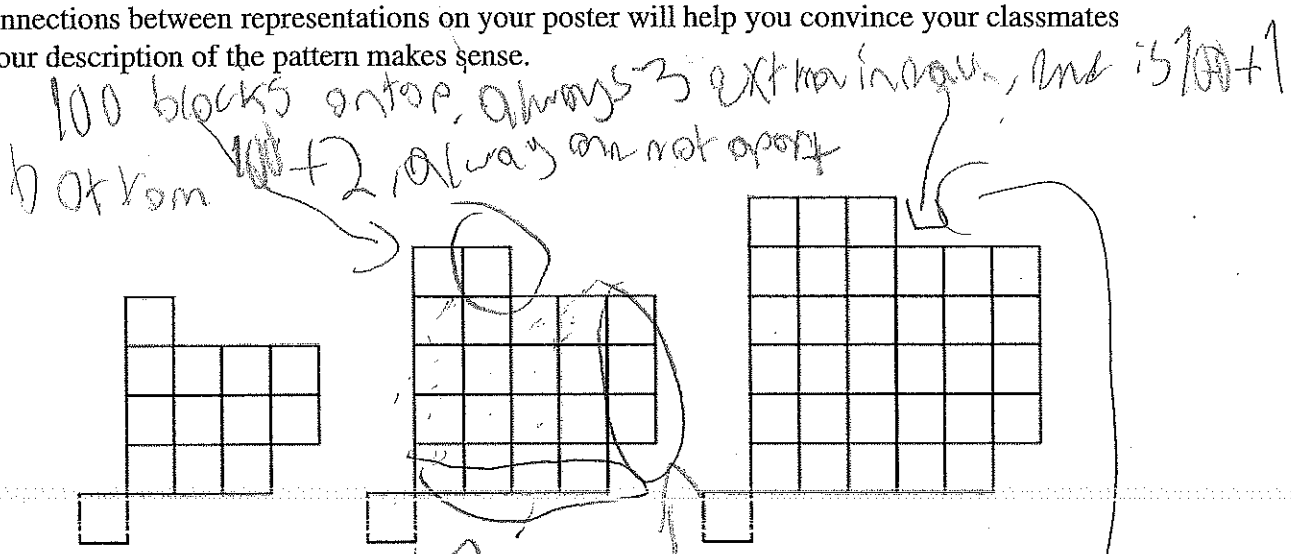

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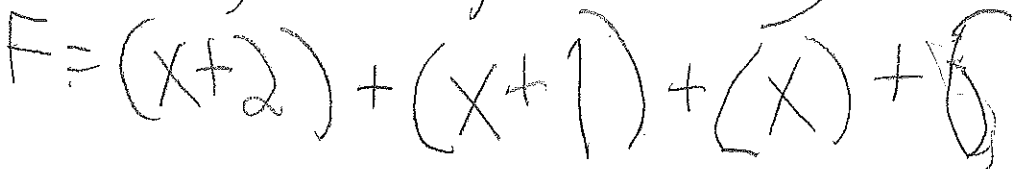

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