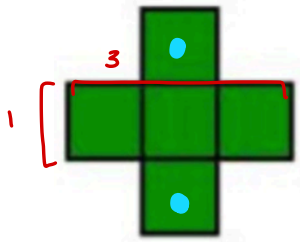


Figure 1

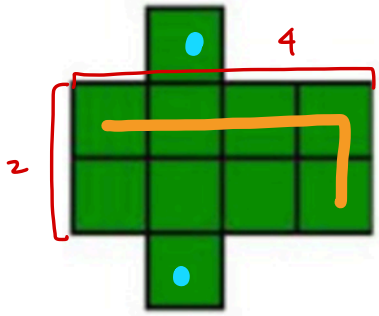


Figure 2

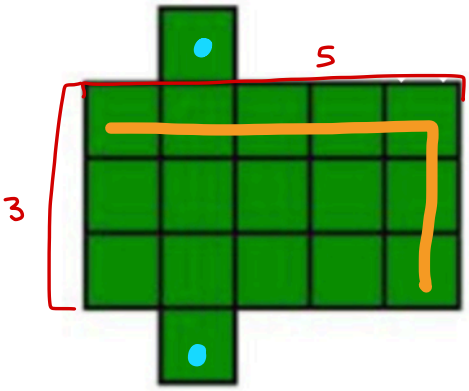


Figure 3

1. How do you see the pattern growing? Use colors to show where you see the new squares being added.

I see an additional row + column being added in the middle portion and the 2 "wing" squares get pushed out.

(Answers will vary)

2. Draw Figure 4. How many small squares would be in Figure 4? In Figure 5?

$a_4 = 26$

$a_5 = 37$

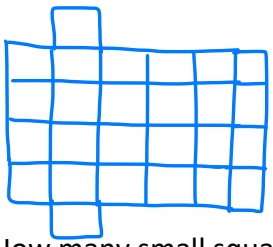


Figure 4: 26

Figure 5: 37

3. How many small squares would be in Figure 43? Describe what it would look like.

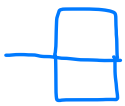
$a_{43} = 1937$

43 rows + 45 colums + 2 wing squares

$43 \cdot 45 + 2 = 1937$

4. How many small squares would be in Figure 0? What would it look like?

$a_0 = 2$



2 squares (just the wings)

0 rows and 2 columns + 2 wings

5. Can you come up with a rule for how many small squares would be in Figure *n*?

$a_n = n^2 + 2n + 2$

↑ Figure #

$n(n+2) + 2$

width · length + 2

$n^2 + 2n + 2$

Figure #	# of squares	
1	5	+5
2	10	+7, +2
3	17	+9, +2
4	26	+11, +2
5	37	

constant second difference!

Quadratic