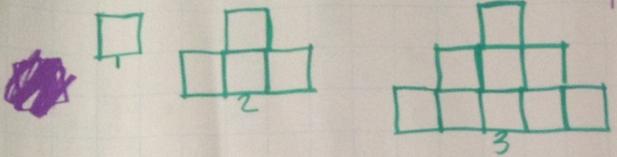


Number of Columns

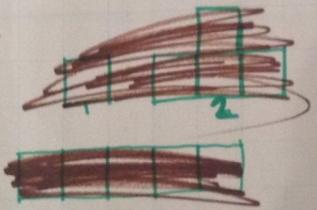
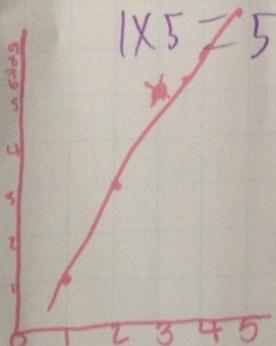


$(L) \times (W) = (A)$

$1 \times 1 = 1$ $1 \times 7 = 7$

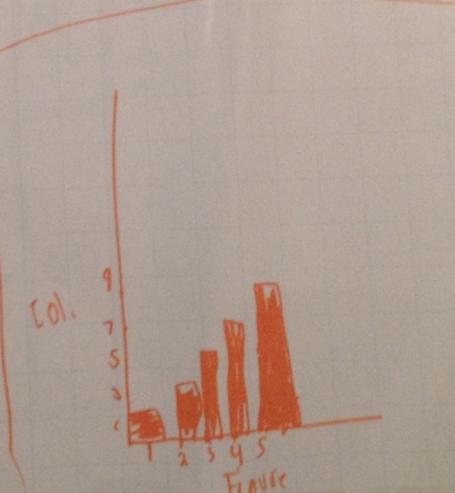
$1 \times 3 = 3$

$1 \times 5 = 5$



the number of columns increased by two each time

Fig.	Col.
1	1
2	3
3	5
4	7
5	9
6	11



Number of Rows

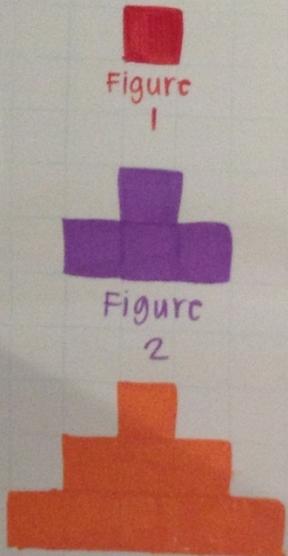
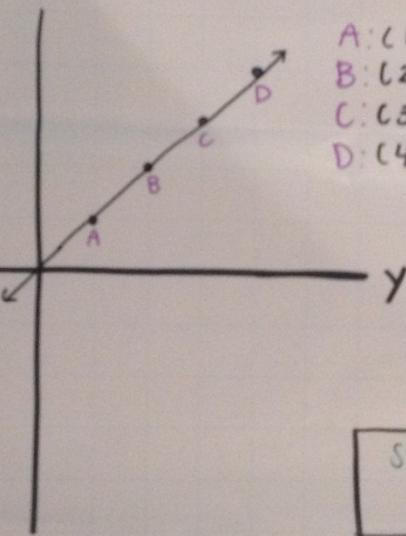


Figure 1
Figure 2
Figure 3

Graph



A: (1,1)
B: (2,2)
C: (3,3)
D: (4,4)

Table

STEP IN Pattern	# OF ROWS
1	1
2	2
3	3
4	4

Statement:
Each time a figure is made, a row is added.

Interior right Angles

1	4
2	16
3	36
4	64
5	100
6	144
7	196
8	256

Steps # of 90°

It's Gradually
increasing and
making a Curve.

$p = 8$ $p = 20$ $p = 32$

$\Delta P = P_i + 12$
 $\Delta P = P_i + 12(1-1)$
 $\Delta P = P_i + 12(x)$
 $P_n = P_i + 12(n-1)$

$P_n =$ perimeter of desired figure
 $P_i =$ perimeter of initial figure

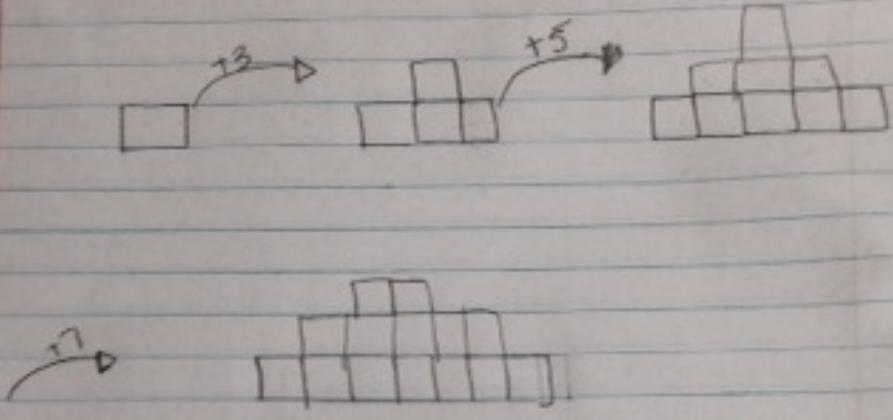
#Blocks $k =$ location in pattern
 $\# \text{ blocks} = k^2$

1	4	9	16	25
3	5	7	9	

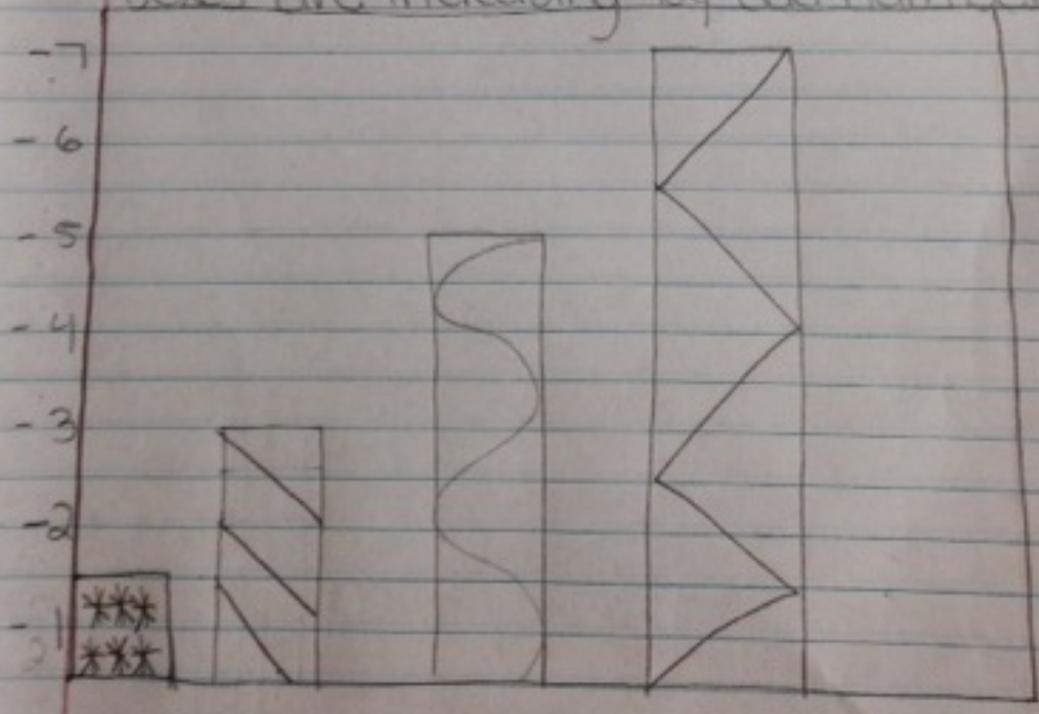
Figure #	#blocks
x	y
1	1
2	4
3	9
4	16

$y = x^2$

The



As the # of boxes increase the area of the boxes do also. The boxes are increasing by add numbers.



VERTICES

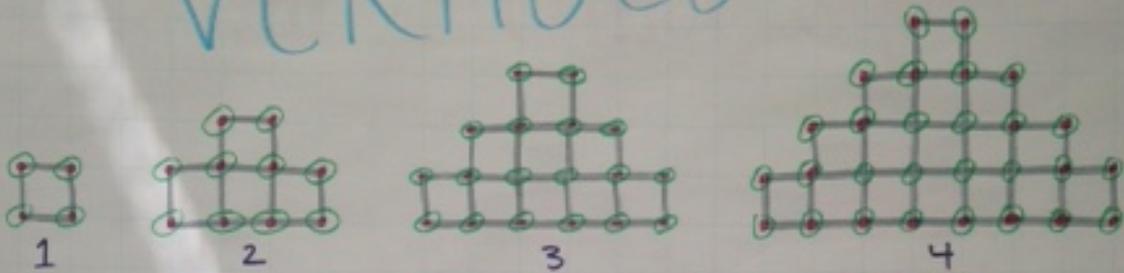
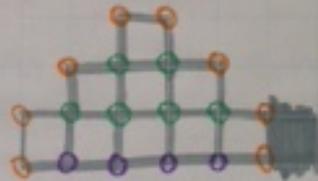


Figure	L		I		+	
	2	3	4	5	6	7
1	4	4	0	0	0	0
2	6	6	2	2	2	2
3	8	8	4	4	4	6
4	10	10	6	6	6	12
5	12	12	8	8	8	20



$$r_1 = 4$$

$$r_n = r_{n-1} + 2$$

$$r_1 = 0$$

$$r_n = r_{n-1} + 2$$

$$r_1 = 0$$

$$r_n = r_{n-1} + 2$$

~~XXXXXXXXXX~~

$$r_{n_0} = n(n-1)$$

Squares Touching Only 0, 1, or 2 Other Squares!



Figure 1



Figure 2



Figure 3

Figure #	Total #	Outside #
1	1	1
2	4	3
3	9	5
4	16	7

We noticed...

- As the figure number increases by 1, the outside number increases by 2.

of outside squares
 $O_n = 2n - 1$

To get from one figure to the next you add 1 square on top of every outside square from the previous figure. Then add one square to the left and right of the base, and that's where the +2 comes from

The difference between the number of outside squares and the total number of squares is $(n-1)^2$ where n is the figure number.

