

PLEASE READ!!!

- Today, you will be working with your elbow partner.
- If you have a 3-person table, I will put one of you with someone from another 3-person table.
- Each pair should have one whiteboard, one marker, and one eraser. (If you are in 3rd period, you need to go get them. If you are not in 3rd period, they should already be inside your desks!)
- You will work together to complete the warmup on this whiteboard.

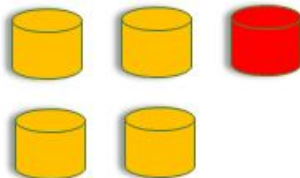
Warmup $8/(2^3 + 1^3)$

*****REMEMBER, YOU SHOULD ALWAYS HAVE YOUR HOMEWORK OUT WHEN YOU START YOUR WARMUP!*****

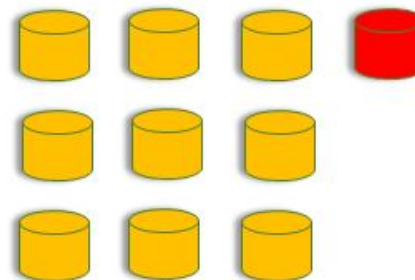
1. Draw the next step (step 4). How many cylinders are there?
2. How many cylinders would be in step 40?
3. Make a “quick sketch” of step 40. (you don’t have to draw all the cylinders – just draw the overall shape & label w/ numbers)
4. If “n” is the step number, write an expression that gives the number of cylinders in step “n”.



Step 1



Step 2



Step 3

JOBS (3rd)

Paper Returners: Janae

Homework Collector: Hanan

Folder Alphabetizer: Cayden

NEED:

- **Homework Writer**
- **2 Paper Passer-Outers**
- **1-2 Paper Returners**

JOBS (4th)

Paper-Passer-Outers: Jasmine & Kennedy

Paper Returners: Journey & Maggie

Homework Collector: Kara

Folder Alphabetizer: Paige

JOBS (6th)

Seriously y'all...

We need a LOT more people to step up and do a job.

Paper-Passer-Outers: Jacob C

Paper Returners: Jacob C and Josephine M

Folder Alphabetizer: Josephine M

Still Need:

1 Paper Passer Outer

1 Homework Collector

3-4 Whiteboard Material Collectors

For each pattern, your pair will:

- 1) Draw the next step (exactly)
- 2) Make a “rough sketch” of step 40 and calculate how many blocks, units, etc. there are
- 3) Write an expression using “n”

If you and your partner are having trouble figuring it out, you may ask the other pair at your table.

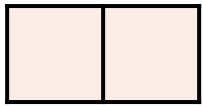
Early finishers: Try to come up with an alternate method of “seeing” the pattern

NOTE:

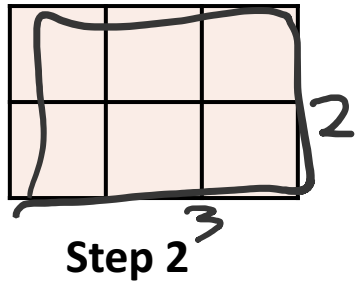
Last year, you often used the “make a table” strategy. We will use this strategy at times, but I am going to focus much more on the **VISUAL** aspects of the patterns.

You can make a table if you are stuck, but I am always going to make you go back and explain your expression using the picture.

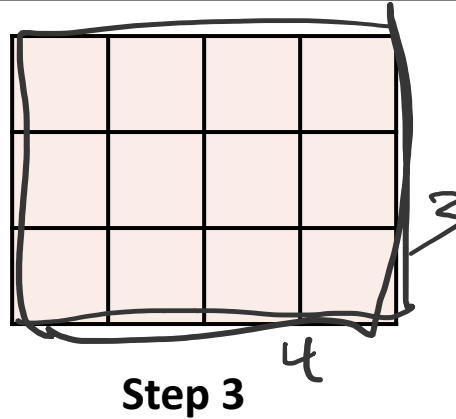
Another pattern



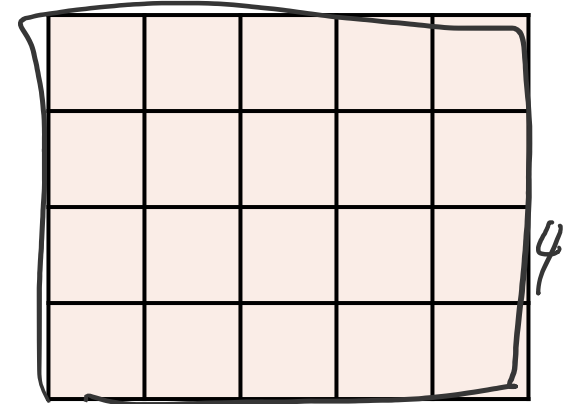
Step 1



Step 2



Step 3



Step 4

Draw the next step. How many squares are there?

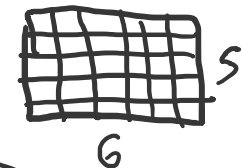
Step 40? (With picture!!!)

Expression using "n"?

$$n(n+1)$$



1640 squares

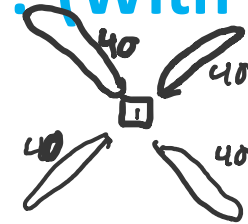


30

Draw the next step. How many squares are there? *17 squares*

How many squares would step 40 have? (With picture!!!)

Expression using "n"? $4n + 1$



161 squares



Step 1

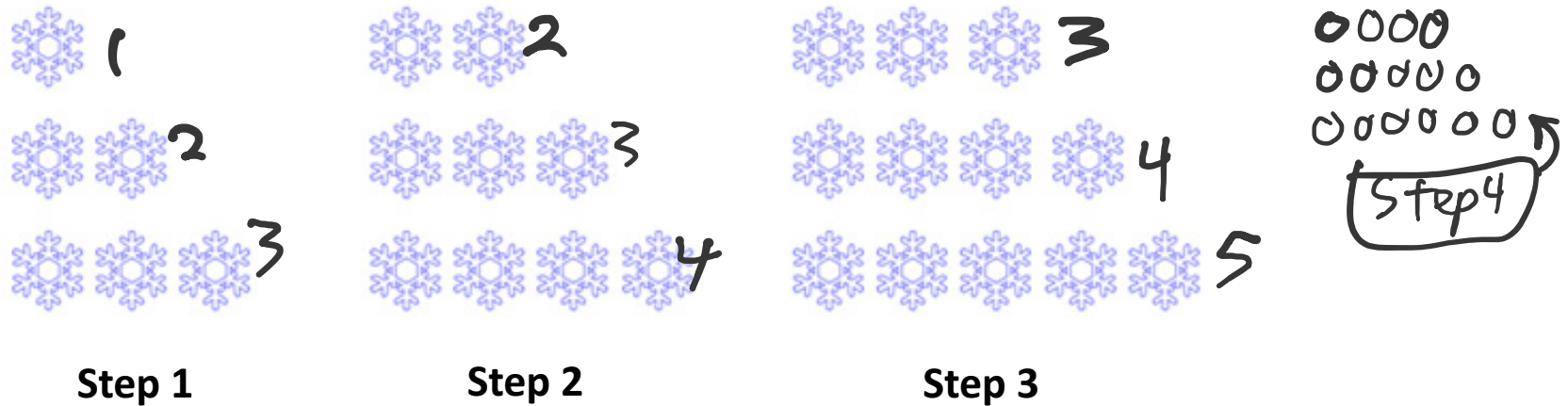


Step 2



Step 3

Another pattern

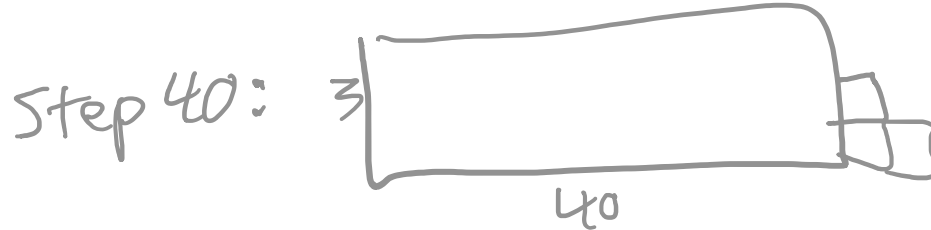
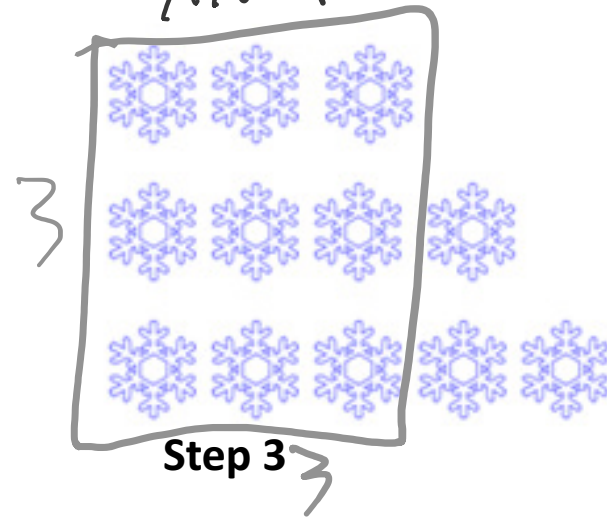
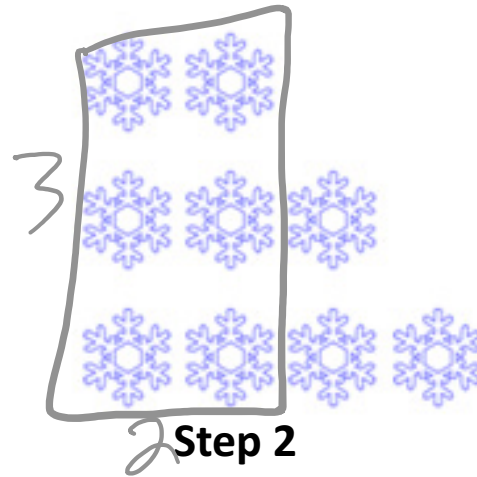
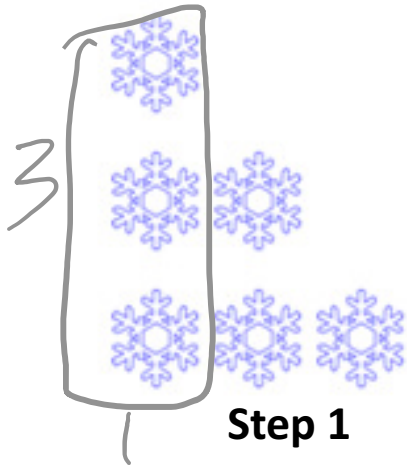


Draw the next step. How many snowflakes are there?
15 snowflakes

Step 40? (With picture!) 

Expression using "n"? $(n) + (n+1) + (n+2)$

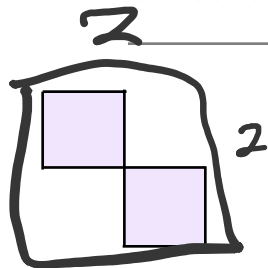
ANOTHER WAY!



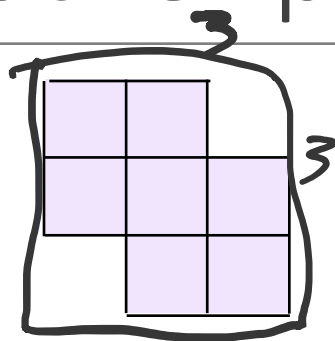
$$3 \times 40 + 3 = 123$$

Expression: $3n + 3$

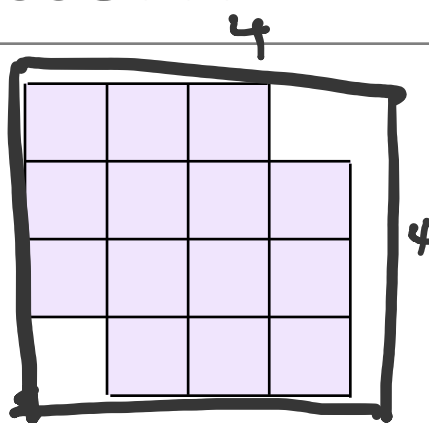
Another pattern



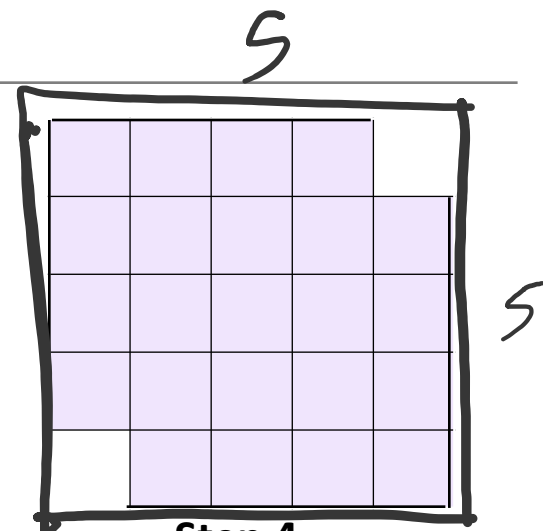
Step 1



Step 2

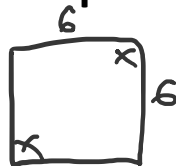


Step 3



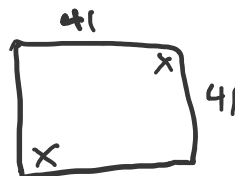
Step 4

Next step?



$$6 \cdot 6 - 2 = 34$$

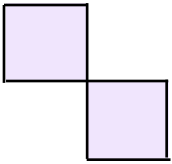
Step 40? (With picture!)



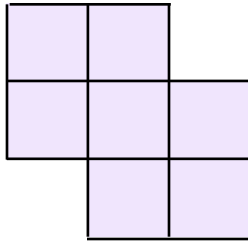
$$41 \cdot 41 - 2 = 1679$$

Expression using "n"?

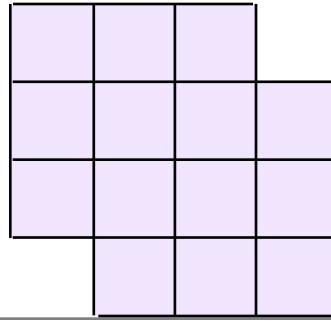
$$(n+1)^2 - 2$$



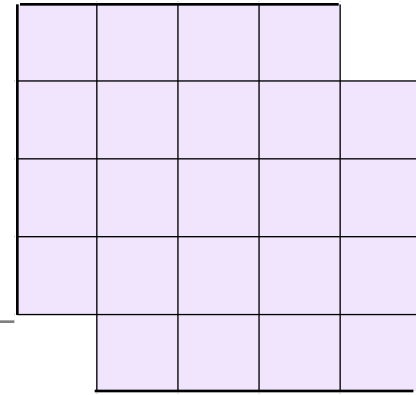
Step 1



Step 2



Step 3



Step 4



Homework (Due Tuesday)

Visual Patterns Worksheet