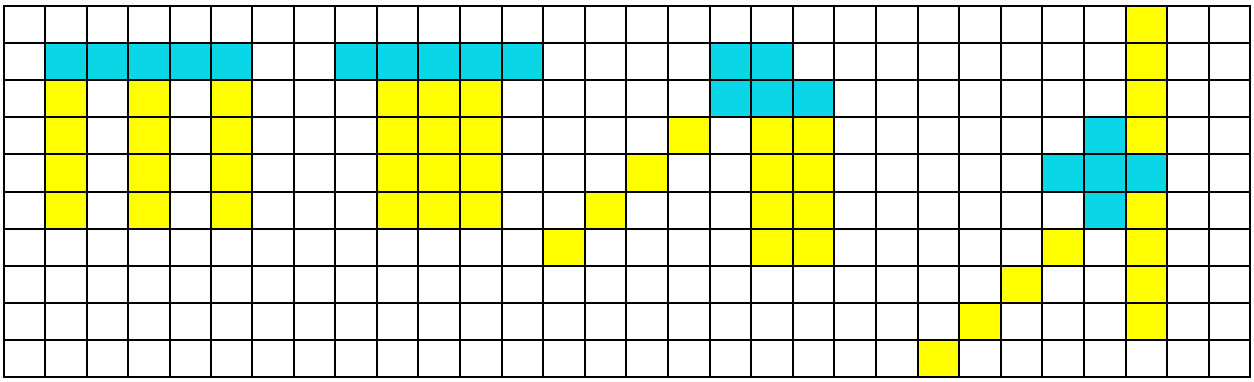
Starting with the function 3n+5, we're going to make an area pattern, so at step n, it should have 3n+5 shaded.

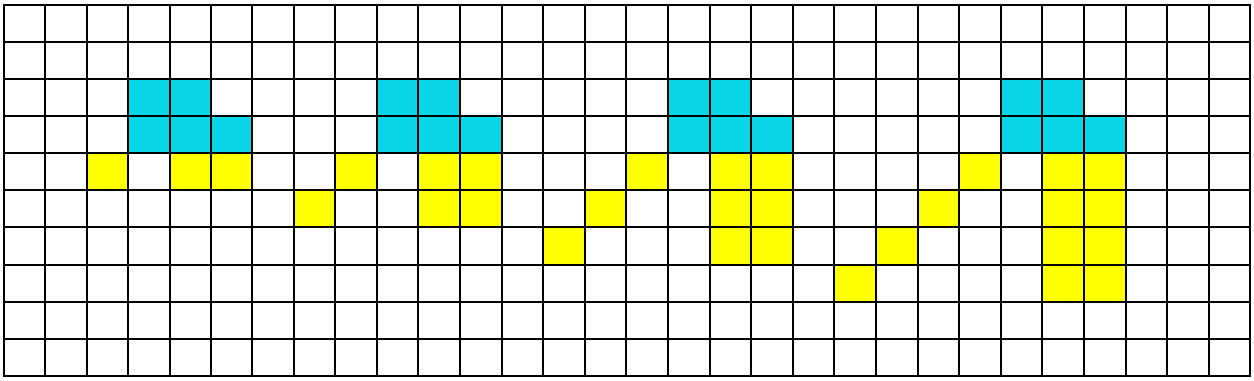
Start with making 5 squares—you choose a shape.

The first one we draw will be for n=4, and we're going to think of 3n as 3 groups with n squares in each group. Figure out what direction you want your 3 groups to go in, and put 4 in each group.

Here are some ideas different people game up with:



Once you have something that works, draw the same thing but for n=1, n=2 and n=3



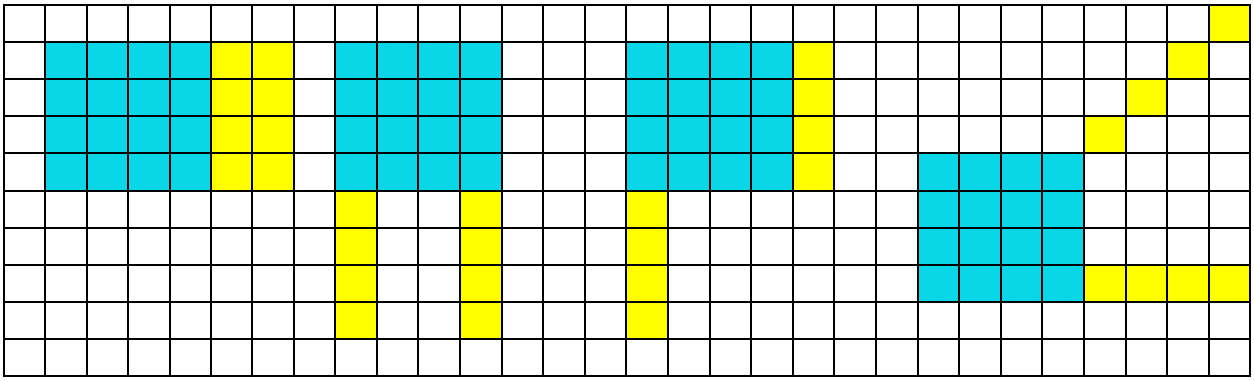
(**Do this for your own pattern, and then do the table and graph—see next example)**

For the formula $n^2 + 2n$, you'll need to make an n × n square for the n^2 part.

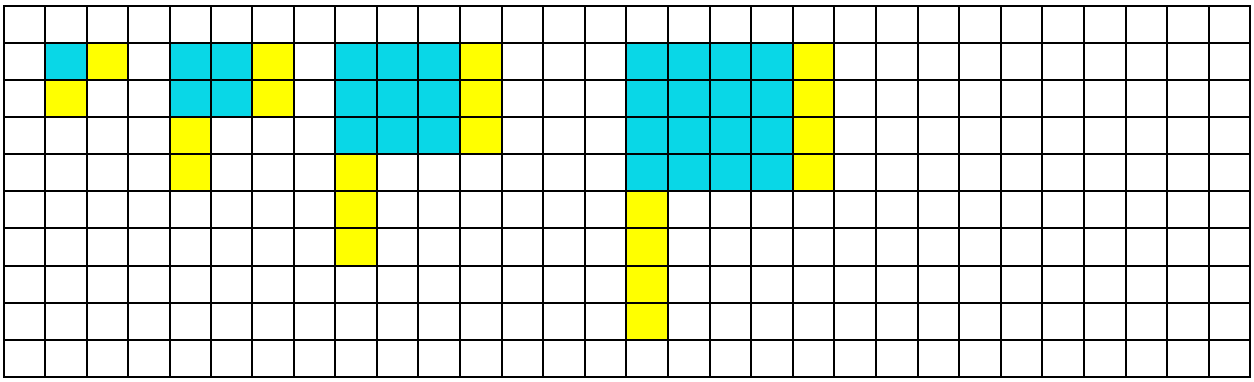
For the 2n part, we're going to arrange this as 2 sets with n in each set

Draw it first for n=4. Start by drawing a 4 × 4 square.

Then add on 2 lines that are 4 long. The lines can be next to the square and make it into a rectangle, or they can point off the sides. Here are some possible ways to do it:



Then go back and make the smaller n=1, n=2 and n=3 versions.

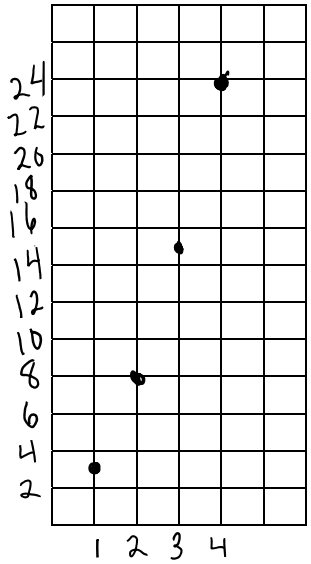


(table and graph on next page)

Now we're going to make a table showing how many squares are shaded for each n:

N	Squares shaded
1	3
2	8
3	15
4	24

Then we're going to make a graph showing this. I'm going to make the scale on the vertical axis go up by 2 every time so I have enough room for all of my numbers:



Bring your pictures and graphs to class on Monday!