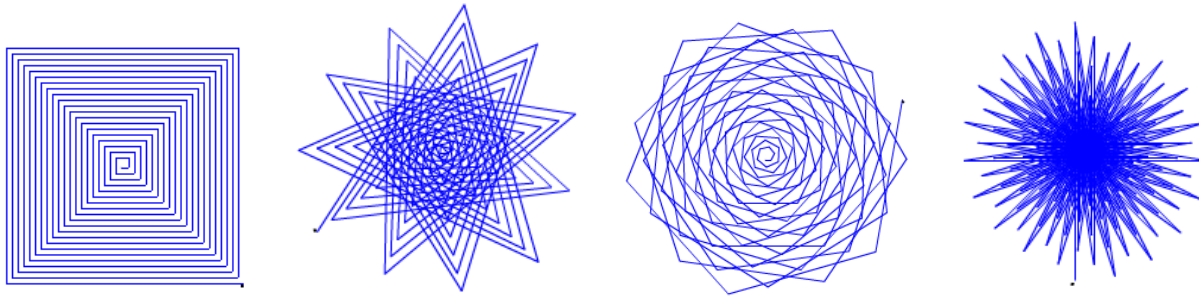Scratch day 10: pen tool and geometric designs
Due Thursday 4/1/21 by midnight

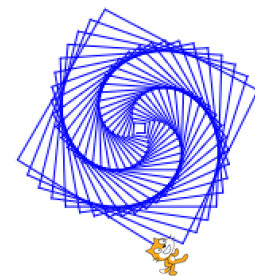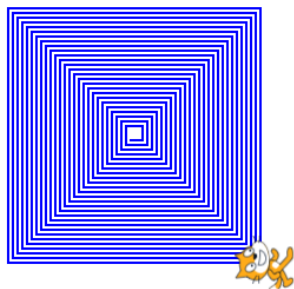Today we're going to make crazy geometric shapes like these:

Today's project uses the pen tool, which I already put into a starter project that you will remix. If you ever want to add the pen tool to one of your projects you can get to it by clicking on the extensions block, down under all the other block categories:

Log in to Scratch if you have not recently logged in.

Open the project shared with this assignment on the Google Classroom. Click the Remix button to make a copy of it in your account.

Click the Green flag to see what happens. By default, this program makes this square design:

If you change the "turn [90] degrees" block down near the bottom of the program to a different number, say 88, you get this image over to the right. That's because after going the distance in the variable "steps" the sprite doesn't make a perfect 90 degree turn, instead turning 88 degrees, which makes a totally different sort of design.

Try some different "degrees" values and see if you can find one that you particularly like. I suggest trying 30, 45, 60, 75, 105, 142… play around with this a bit, have some fun.

I already created a variable "degrees". Drag over a set degrees to block to the top of the program. Put your favorite value for degrees that you've found so far in this line. Use the degrees variable down near the bottom of the program (where we were playing with values) instead of the 90 degree value. Run your program to make sure it still works.

Change the color of the pen using one of the pen color blocks. Make sure it still works.

Add code to randomly choose a degree value up near the top for the drawing between 1 and 360. Make sure it still works. (And now you'll see that not all values make great drawings!)

Finally, put your entire program into a forever loop so that it draws a design, waits 1 second, clears it, then draws another one, etc. each with a random degree setting, forever. Make your designs mostly fill the screen (just make sure they're not super small or way way too big.)

Here's a checklist for today:

1. Your program chooses a random value from 1 to 360 and draws a design with it.
2. Your program waits 1 second, then clears the screen, chooses a new random value and does another drawing.
3. Your program repeats this forever.
4. The pen color is non-default (you can make the pen change color continuously, that's fun, too.)

Alternatively, if you have a great idea for making a pen-based design that you think would be really cool, go ahead and do that. Leave me a private comment on the assignment in the Google Classroom so that I know what you are thinking.

If you're having trouble with this assignment watch the video posted in the Google Classroom that shows you how to do it.