

# Pen Challenge!

*Today we are going to explore the pen tool. Explore the code and complete as many challenges as you can.*

*Tags: art, functions, circles, shapes, geometry*

## Explore

**Start** by *remixing* the **Pen Demo**. Here's how:

1. Log into Scratch
2. Type this URL into the web browser:  
<http://bit.ly/pen-demo>
3. Choose “Remix” from the project page
4. Change the code as you — have fun!

**Explore** the code. What happens when you:

- Change the pen color?
- Change the pen size?
- Change the **parameters** of the custom blocks?
- Stamp the **pen** at different points in your drawings?
- Use **random** to set the pen color or pen size?
- What happens when you **rotate** the sprite before drawing shapes?

## Level 1 Challenges

Try some of these challenges to get your started. For all of your code, make sure you put it in a custom block!

### 1. Make a design

Look at the code examples and change them to make your own design. Use **x** and **y** to move the pen to different parts of the screen. Use **loops** to make patterns.

### 2. Draw a house

Can you draw a house using the **square** and **triangle** custom blocks?

### 3. Draw a snowman

Can you draw a snowman using **circle** and the other custom blocks?

Are you able to add buttons, a hat? What else?

## Level 2 Challenges

Already mastered the level 1 challenges? Ready for something tougher?

### 4. Draw your name with pen

That's right...see if you can write your name using only the **pen** tool and move blocks.

### 5. Make a rectangle custom block

Duplicate **square** and see if you can change it so that it draws a rectangle. For your rectangle custom block you will need two *number inputs*, `length` and `width`.

## Level 3 Challenges

### **WARNING THIS IS HARD STUFF!**

6. Can you change **square** so that it draws a hexagon (6-sided polygon), octagon, or other figure? Hint: remember that  $360^\circ$  are important to us.

7. Make a custom block that makes a colored square (red, blue, etc).