Scratch **Seeing Stars**

Register/login at https://scratch.mit.edu
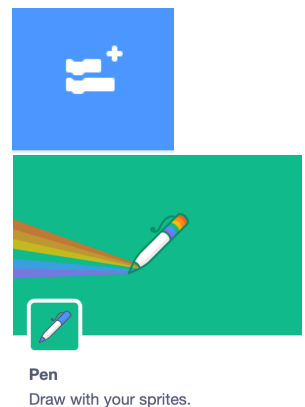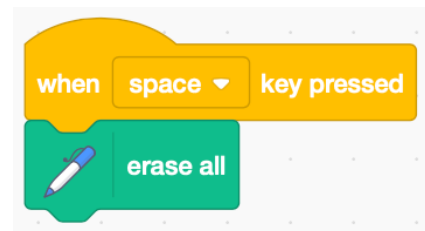Remember to write down your password.

Create your own code blocks to draw stars.

1) Click on the **Add Extension** button at the bottom left of the screen.

2) Select the **Pen** extension. New **Pen** code blocks appear below the other code blocks.

3) You can use any sprite but hide it with the **show** button in the sprite controls.

4) Clear drawings with the **erase all** block **when the space key is pressed**.
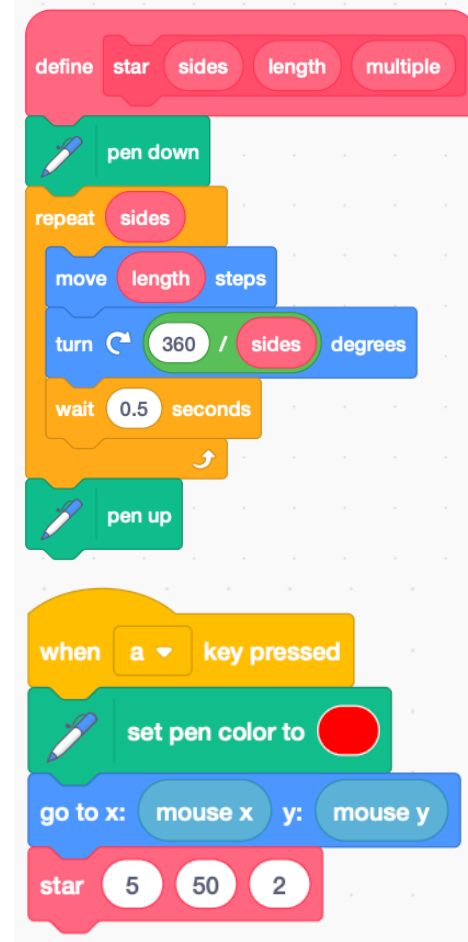
*Make a new block in **My blocks**.*

5) Click **Make a block** and input the block name **star.**

6) **Add an input** (number or text) called **sides.**

7) **Add an input** (number or text) called **length.**

8) **Add an input** (number or text) called **multiple.**

9) Click **OK.**

*Start with a polygon (many-sided shape). Drag **sides** and **length** from the **define** block into the code below it.*

10) Define the block with code (right) that starts by putting the **pen down** and ends with **pen up**. The **repeated sides** are a **move length** followed by a **turn** at the corners, and a short **wait**.

11) When a **key is pressed**, set the **pen colour** and move the sprite to the **mouse** position. Then use the **star** block with 5 **sides**, **length** 50, and **multiple** 2 (but we don't use it yet).
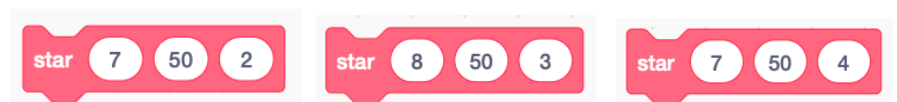
*The **external** angles of a polygon add up to 360° (degrees), with a **turn** of 360 **divided** by the number of sides. Multiplying by **multiple** makes them pointier, like a star.*

12) In the **turn** replace **360** with [multiple * 360] to turn polygons into stars.

13) Duplicate the code that uses your block. Change it to a different **key** and **colour** and try different **star** numbers.

Try these numbers: [star 7 50 2] [star 8 50 3] [star 7 50 4]

*Remember to **Save** your code with a good name.*

File > Save now