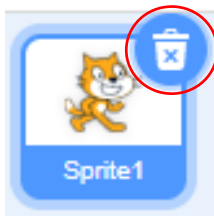


Code With Scratch:

Create a Space Themed Screensaver

The coding steps:

1. Delete the Scratch Cat sprite and start with fresh screen
2. Use the scratch tools to add a background and create a clear page command
3. Use the scratch tools to add a drawing sprite (pencil) and set start position
4. Use coding blocks to add pen drawing blocks
5. Add coding blocks that will draw the outline of a square
6. Test and debug
Improve the program and draw new shapes.

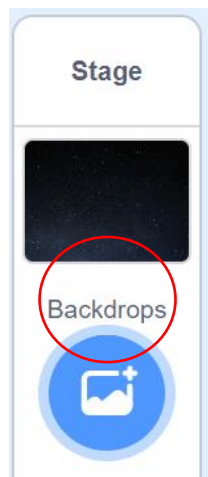


Step 1:

Whenever you start a new scratch project, the Scratch Cat appear by default.

To delete the Scratch Cat, move down to the sprite area and click on the **rubbish bin**. This will delete the sprite so that you can start afresh!

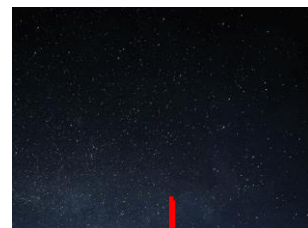
Step 2:



Choose a plain themed background by clicking on the blue icon in the **Stage** area and then scrolling through the backdrops until you find a suitable one.

This example uses a simple “Stars” background.

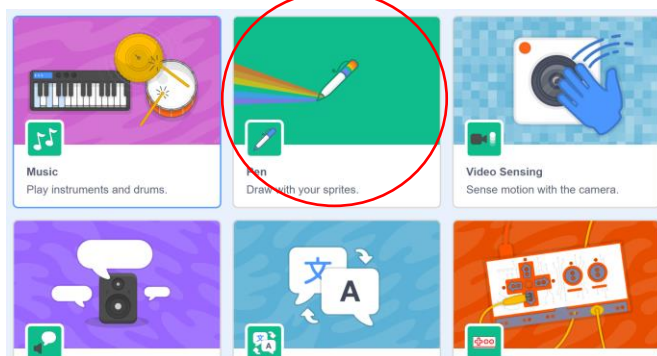
Click on Events and drag “when green flag clicked) onto the coding workspace.



Then, click on the blue squiggles block at the bottom of the code area...



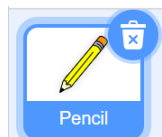
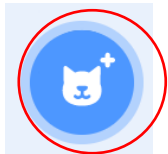
Click on **Pen** and a new selection of drawing blocks will be added to the coding area:



Drag **Erase All** over to the coding area and connect it onto the first block.

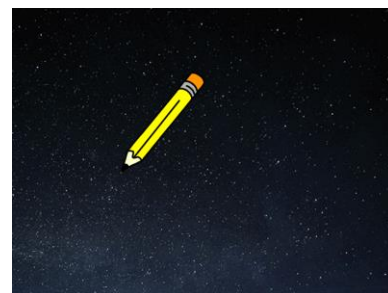


Step 3:



Now click on the **Choose a Sprite** area and scroll through until you find a suitable drawing sprite – This example uses a pencil (but a magic wand could be fun too!) 😊

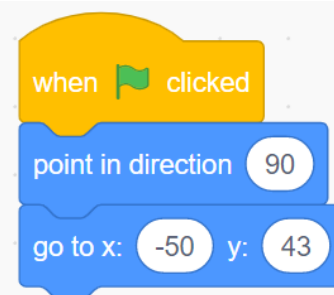
Click on it and it will be added to the screen.



Set the starting position of the pencil sprite, by going to the coding area, clicking on **Events** and dragging “When green flag clicked” onto the coding workspace.

Then go **Motion** and drag “Point in direction 90” onto the first block.

Then drag and add the “Go to X Y ” block. Change the values inside the block to read: **X -50 Y 43**.



Step 4: Use the scratch tools to add a drawing sprite (pencil) and set start position

Click on the Events coding area and choose **When this sprite is clicked** and drag it onto a clear space in the coding workspace.

Click on the Pen code blocks and drag pen down and set pen colour to onto the **When this sprite is clicked** block.

At this point, you can click choose the colour of the line the pen will draw by clicking inside the colour box, For this example, a bright yellow has been used.



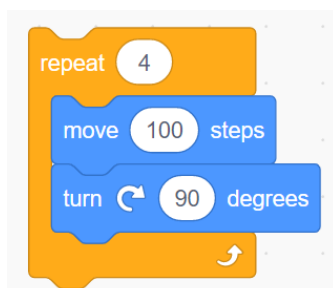
Step 5: Add coding blocks that will draw the outline of a square

Got to the Events coding area and drag a “Repeat _ ” onto the coding workspace.

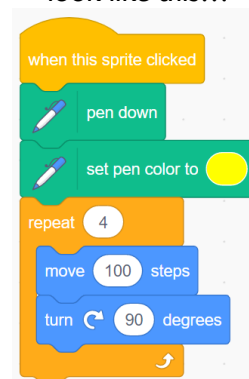
Then drag Move 10 steps inside of the repeat block.

Now do the same with a “turn 15 degrees” block.

Change the values inside of the blocks so that they look like this. **What do each of these values do? Why are they important to drawing a square?**



Now connect these blocks of code together so that they look like this...



Step 6: Test and debug

Press the **green flag** to start the program. Click on the pencil sprite. **Does it draw a square?**

If not, read back through each stage of the code, identify the errors and correct them (debug) 😊

Step 7: Improve the program and draw new shapes.

Now that you have the basics, think about how the program could be improved. You could...

- Edit the drawing code so that it can plot an equilateral triangle, a pentagon, a hexagon, etc.
- Duplicate the pencil and edit the code so that different shapes can be draw in different areas of the screen