Scratch Program #2 • Space Maze

We’re going to make a simple maze game with sound and a score. In the end, it will look something like this:

Part A: Inserting the Characters

When you load up Scratch it already has the cat on the Game screen.

1. Click on the center **Insert button** that looks like a folder.

2. Double-click on the “Things” folder and select the “rock” image.

3. Click on the right-hand **Alteration button** that will shrink the sprite image. Click on the rock on the Game screen several times to get the size smaller.

4. Now control-click (or right-click) on the rock image in the Character tray and choose “duplicate”. Do this three times so you have (at least) four rocks.

Your Character tray should now look like this:

5. Repeat parts 1-3 to insert the flying carpet image. You’ll find it under the “Transportation” folder.
Part B. Animating the Cat
In Scratch, you create a program by adding code pieces together in a vertical puzzle-like line. Each code puzzle piece has a part of programming code. The Code buttons are like drawers that contain the programming code pieces.

1. First, click on the cat’s picture in the Characters tray (Sprite 1).
2. Click on the yellow “Control” Code button.

3. Drag into the Sprite commands tray the following pieces and arrange them like this:

4. Drag over an “if” piece then click the brite blue “Sensing” Code button and drag over a “key [space] pressed” piece. Put them together in this way:

5. Click on the “space” arrow and change it to “right arrow”.

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6. Notice that you can also resize the cat using the Alteration buttons and move the images around on the Game screen. Set up your Game screen so that it looks like this:
6. Now click on the blue “Motion” Code button and drag in a “change x by [10]” piece.

7. Drag the whole “if” piece up in the original code pieces:

8. Repeat steps 1-4 to create “if” code pieces for the down, left and right arrows. (left and right arrows will need “change y by [10]” pieces instead of “change x...” pieces)
Your code should now look like this:

9. Use the Code buttons to bring out the following code pieces and arrange them as shown.

Now you can click on the green start flag and move the cat around the Game screen.
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Part C. Making the rocks “playable”

1. To make the rocks “solid” we are going to add several lite blue “touching” pieces, one for each rock, and three “or” green pieces.

2. Fit them together and change the drop-down arrows like this:

3. Now put the whole piece in the yellow “repeat until” piece:

Try moving the cat around (remember, click on the green flag). It should freeze if you hit a rock.

4. We are going to make a “rock hit” move the cat back to it’s starting position. Drag in a blue “set x to [0]” and a “set y to [0] piece”, changing the numbers as shown.

5. Duplicate them and add them to the top of the code as well:

Try moving the cat around again.

7. We also want to add sound if the cat hits a rock. Click on the pink “Sound” Code button and drag in a “play sound [meow]” piece to the program.
Part D. Making the carpet “playable”
1. Click on the magic carpet picture in the **Characters tray** (Sprite6). The Sprite commands tray should go blank because thus sprite has no code yet.

2. Click on the appropriate **Code buttons** and drag in the following pieces:

3. Arrange them in this order:

Part E. Adding the finishing touches
1. Click on the “Stage” on the **Character tray**. Click on the “Backgrounds” tab and then the “Import” button.

2. Choose a folder and select a background you want to use (I used “stars”).

3. Click back on the cat image in the **Character tray**. You will also have to click on the “Scripts” tab to see your program code again.

4. Use the orange “Variables” **Code button** to “make a variable”. Name it “damage”. Notice that a counter is added to the **Game screen**.

5. Drag out a “set [damage] to [0]” piece and a “change [damage] by [1]” piece and place them in the locations shown:
Finally, have you noticed you can “cheat” in this game by running the cat off of the screen?

6. Let’s put a stop to that by adding an “if on edge, bounce” code piece from the blue “Motion” Code button.

Your final cat sprite code should look like this:

And that’s it! Feel free to modify this game to your heart’s content, just save as you go!