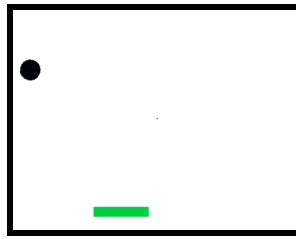


PicoBoard Pong

Inspired by the Pong Starter on the on-line Scratch community, here is a simple Pong game using the PicoBoard.

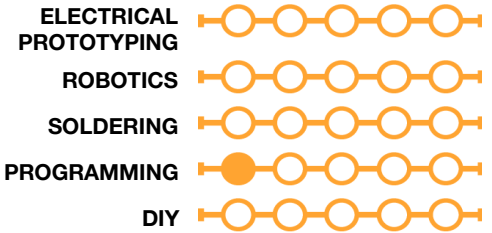
We hope that this will give you ideas of how to modify / adapt / change this to be your own version of pong.



SCRATCH

SKILL REQUIREMENTS

DIFFICULTY 1-5



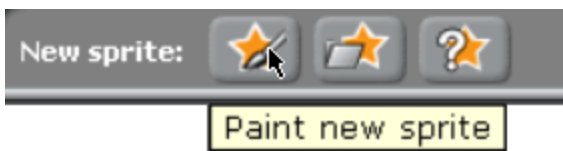
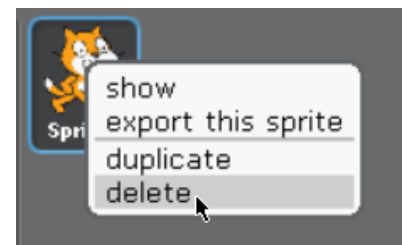
MATERIALS LIST

- Computer
- Scratch
- PicoBoard

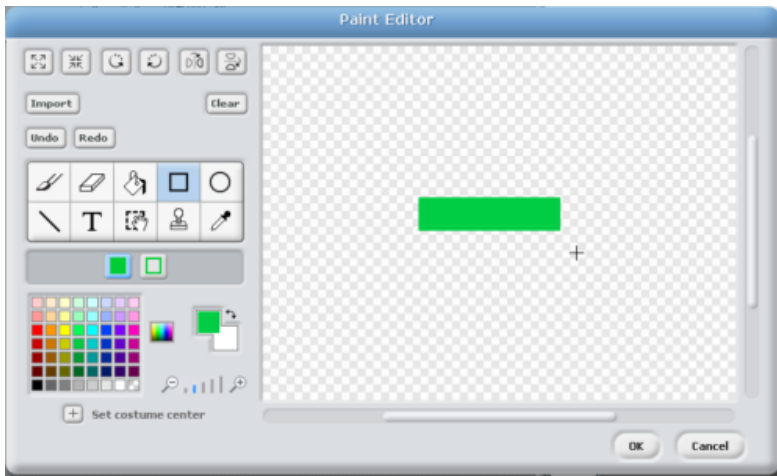
STEP 1: Creating your sprites

For this activity, we are going to delete the default Scratch cat. Right click on the cat in the lower-right and select delete.

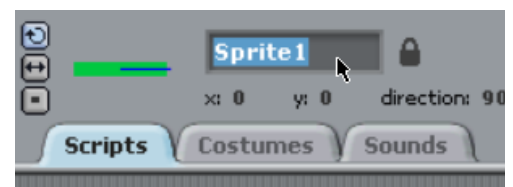
Now, on the bar just above this, click on the paintbrush or the “Paint new sprite” icon.



Use this paint window to create our paddle for the Pong game. You can make your paddle any shape you like, but make sure that it's only one object.



Now, change the name of the sprite to something less generic than “Sprite1”. I change mine to “paddle”



STEP 2: Drawing your second sprite - the ball

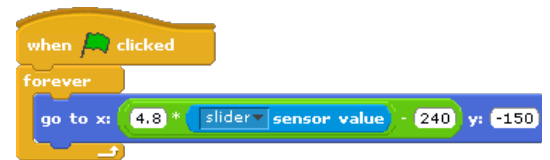
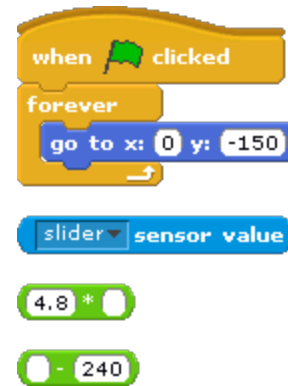
Click on the Paint new sprite icon again to create a second sprite for your game. This time, we're going to draw our ball. This can be a circle or any shape you want. When you're done, change the name of this sprite to something more descriptive. I changed the name of mine to "ball".

STEP 3: Adding the paddle code

We need to have code that works on both the paddle and on the ball. The first bit is so that the paddle moves left to right on the bottom of the screen with the PicoBoard.

Now, I have two math functions that we need to do here. First, multiply the slider value by 4.8 to scale it to a range of -240 to +240. I then subtract 240 so that 0 moves the paddle to the left most side of the screen. Watch your order of operations! Multiply first, then subtract!

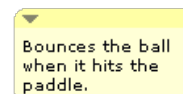
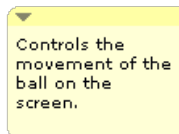
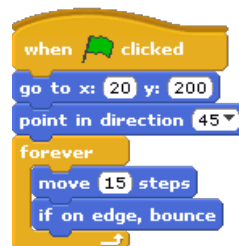
It should look like this when you're done. Make sure that this script is being added to the paddle and not the ball.



STEP 4: Adding the ball code

Okay? Now, add the code to control the ball. This script will have two parts - one just to handle the ball bouncing off the edges of the screen, and the other to handle when it hits (touches) the paddle.

This may seem different, but this script does have two hat blocks, and both scripts will run at the same time when the green flag is clicked.



TAKING IT FURTHER

- Change the move (15) steps to a different number. How does this affect the way the game works?
- Keeping score? There are a lot of ways to add score counting to this. On the stage background, add a solid red bar at the bottom of the screen. When the ball touches the red, stop the game. Use the timer to show how long you've kept the ball in play. You should reset the timer at the beginning - right after the Green Flag hat block.
- Change the ball sprite to be a picture of your own head using the webcam on your computer. Use the paint tool to erase / clean-up the background.

