

Scratch Programming: 2. Game

Task: Create a game. Example: The Pong 'bouncing ball' game.

Lesson Objectives:

To learn how to use a control statement. The 'if' control statement checks a condition and 'then' completes an action if the condition is met.

	Condition	Action
IF	Ball on edge	Bounce
IF	Ball touching _____ (color)	Stop

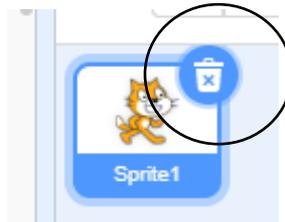
What do you need to do?

Follow the instructions below.

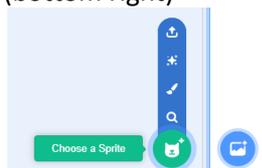
Important. Always save your work regularly. Use the 'Save as' option so you know where the file is saved.

Instructions

1. Click on the delete 'x' symbol on the cat sprite



2. Click on the "choose a sprite" icon (bottom right)



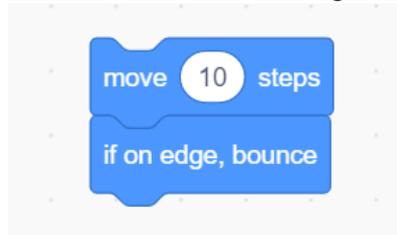
add a ball - in the sprite folder.



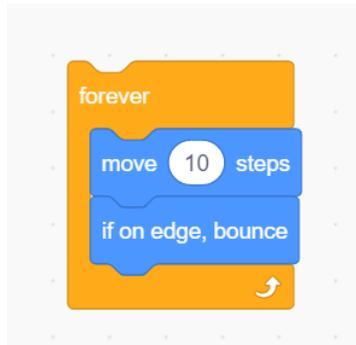
3. Drag a "move 10 steps" block into the script area.
Click the block to try it

Note that the x, y coordinate of the ball changes as it moves to the right.

4. add a "if on edge bounce" block. Connect the 2 blocks together.



- 5. Add a "forever" block from the Control category,
- 6. put the two blue blocks inside it



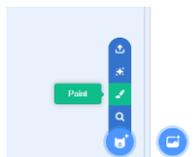
7. Drag a "when green flag clicked" block before the forever loop.

Now you can click the green flag in the upper right corner of the stage and the script will start.

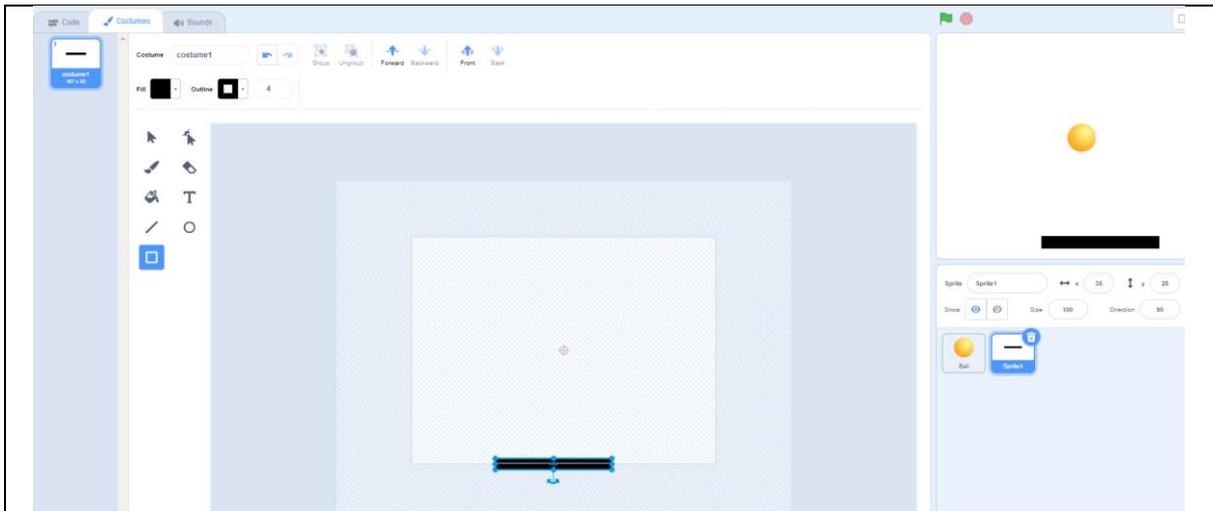
8. Use the "goto x, y" block (on the "Motion" tab) to start the ball at the top centre and set the initial direction to 135 degrees:



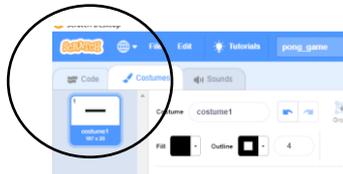
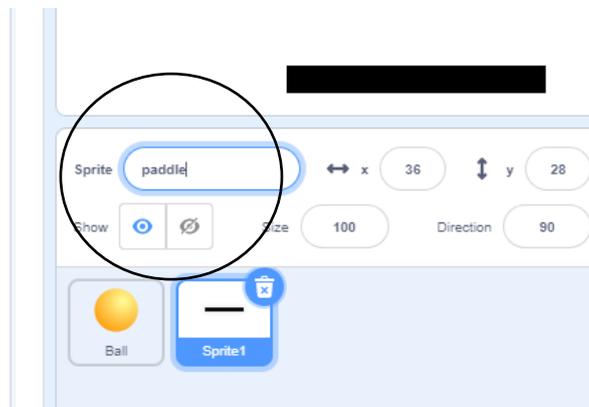
9. Click on the "paint new sprite" icon, which is a diagonal paintbrush.



Click on the rectangle icon, and drag a black rectangle that looks approximately like the one below.



Rename the sprite to "paddle".



Note: to get back to the code, click on the code tab (top left)

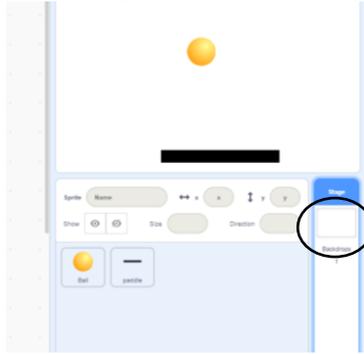
10. set the x value to be the same as the mouse's x value.

We can do this with the following code in the paddle sprite:

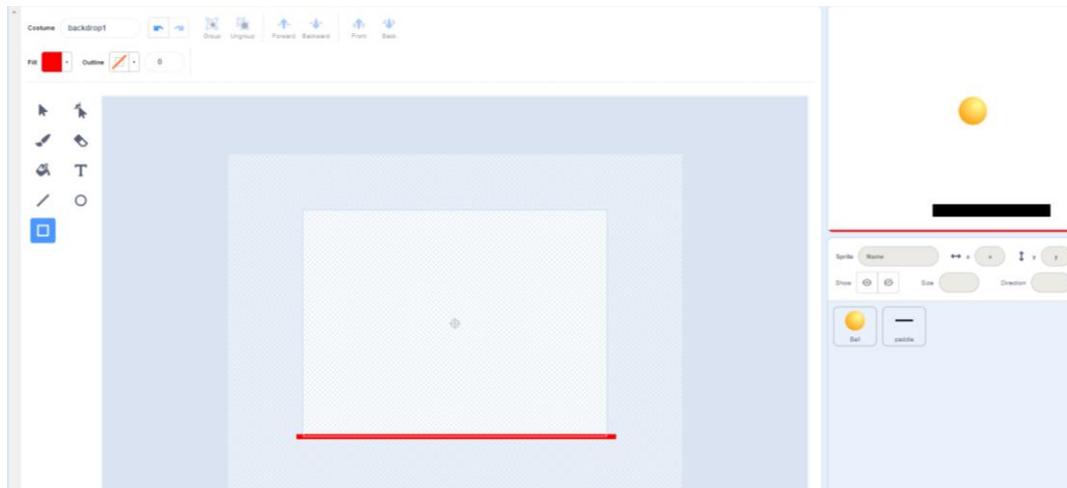


The "mouse x" block is located in the "Sensing" category.
Press the green flag and test that the paddle follows the movement of the mouse.

11. Click on the backdrop square in the stage area



draw a red rectangle at the bottom of the stage.



12. select the ball sprite

Drag an 'if' block (control)

Touching color block (sensing)

Select paddle from the drop down menu

Drag a point in direction block (motion)

Inside put a green operation block for

_____ - _____

Enter 180 then add a direction block

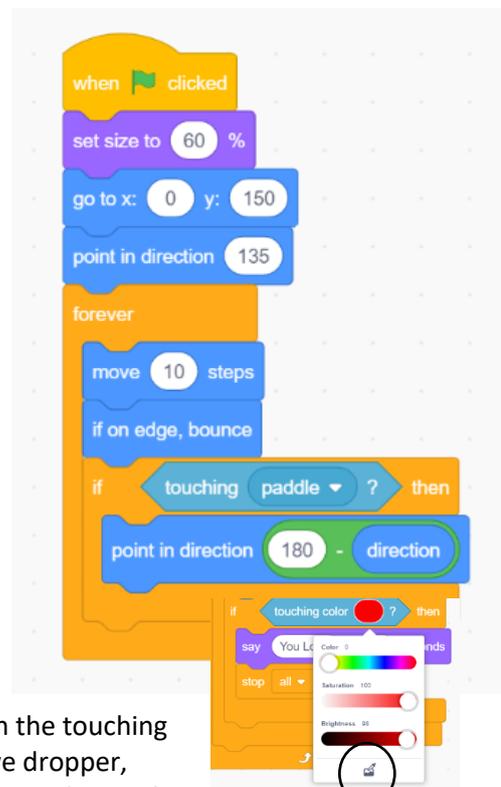
(bottom of motion)

Move all of the 'if' block

under the 'if on edge, bounce' block

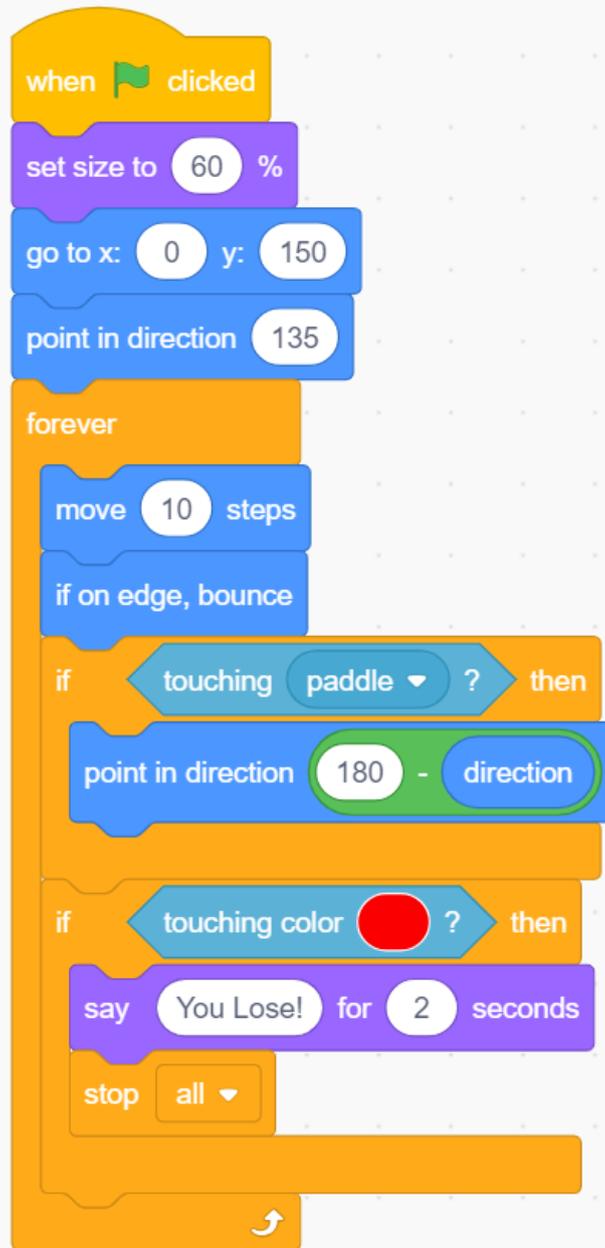
Add a "set size to 60%" block at the beginning of the script (in the purple "Looks" category)

Press the green flag, you should see the ball bouncing when it hits the paddle.



13 The "touching color" Boolean is found in the sensing category.

You can change the color by clicking on the square within the touching color hexagon, which turns the mouse pointer into an eye dropper, then click on the red rectangle in the stage to change the touching color condition to test for red.



Instructions:

Drag an if block

Inside the if part put the touching color block

Click the square & touch something red on the screen

Inside the if block put a say ___ for 2 seconds block (looks)

Then add the stop block (control) and all from the drop down menu

Check it works

Instructions based on Intro to Scratch at <https://sites.google.com/a/jcu.edu/mt513/lessons/7-23/intro-to-scratch?tmpl=%2Fsystem%2Fapp%2Ftemplates%2Fprint%2F&showPrintDialog=1>
<https://inventwithscratch.com/book/chapter5.html> (a more advanced version)

Try to design and code your own game

Well done you have completed Task 2