**CODE YOUR OWN PONG GAME**

**INSTRUCTIONS**

1. Select a ball from the Sprite options and delete any other Sprites on the bottom of the screen

2. When [green flag] is clicked, have the ball start in initial position [20x, 150y]
   - This should put the top edge of your ball in the middle of the top of the screen

3. Point the ball in any direction you want by changing the angle [point in direction]

4. Continue moving the ball in any number of steps forever

5. Constantly check to make sure the ball is not touching the edge, and if it does have it bounce back

6. Select a paddle Sprite for the ball to bounce off

7. Make sure you are writing script for the ball Sprite

8. Under the data tab, make a variable called ‘score’

9. When [green flag] is clicked, set the ‘score’ to zero

10. Constantly check is then ball is touching the paddle
    - If it is:
      i. Change score by a positive number to add a point
      ii. Play a sound to congratulate yourself
      iii. Turn the ball in the direction of your choosing
      iv. Wait for 2 seconds

11. Choose a new backdrop (backdrop tab, add)

12. Draw a rectangle on the bottom of the screen in a color not already on your screen

13. When [green flag] is clicked, constantly check if the ball is touching your rectangle
    - If it is:
      i. Change score by a negative number to subtract a point
14. Make sure your paddle Sprite is selected, and when [green flag] is clicked have the paddle’s y position change to a negative number, just above the height of your rectangle

15. Constantly set the paddle’s x position to your mouse’s x position

16. You’re ready to play!

You should have two scripts for the final pong game – one to communicate with your ball Sprite and one to communicate with the paddle Sprite

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**POTENTIAL TOPICS FOR DISCUSSION**

- Click to start
- Forever loops
- Variables
- Counters (score)
- If then loops
- Angle and direction
- Event blocks, Control blocks, Motion blocks, Sensing Blocks
CODE YOUR OWN PONG GAME USING

SCRATCH

**Task I:**
1. Select a ball from the Sprite options and delete any other selected Sprites
2. When [green flag] is clicked, have the ball start in initial position [20x, 150y]
3. Point the ball in any direction you want by changing the angle [point in direction]
4. Continue moving the ball in any number of steps forever
5. Constantly check to make sure the ball is not touching the edge, and if it does have it bounce back

**Task II:**
1. Select a paddle Sprite
2. Under the data tab, make a variable called “score”
3. When [green flag] is clicked, set the score to zero
4. Constantly check if the ball is touching the paddle
   **If it is:**
   - Change score by positive number
   - Play a sound to congratulate yourself
   - Turn the ball in the direction of your choosing
   - Wait for 1 second

**Task III:**
1. Choose a new backdrop
2. Draw a rectangle along the bottom of your screen
3. When [green flag] is clicked, constantly check if the ball is touching your rectangle’s color
   **If it is:**
   - Change score by negative number
   - Play a sad sound
   - Wait for 1 second

**Task IV:**
1. With the paddle Sprite selected, when [green flag] is clicked have its y-position move right above the rectangle
2. Constantly set its x-position to your mouse’s x-position

NOW YOU’RE READY TO PLAY!
BALL SCRIPT

when [flag] clicked
  go to x: 20 y: 150
  point in direction 45

forever
  if touching Paddle □ □ then
    move 10 steps
    if on edge, bounce
  change score □ □ by 1
  start sound pop □ □
  point in direction 30
  wait 1 seconds

PADDLE SCRIPT

when [flag] clicked
  set y to -102

forever
  set x to mouse x