

# Making Basketball on Scratch – Full Code

## Cat Code

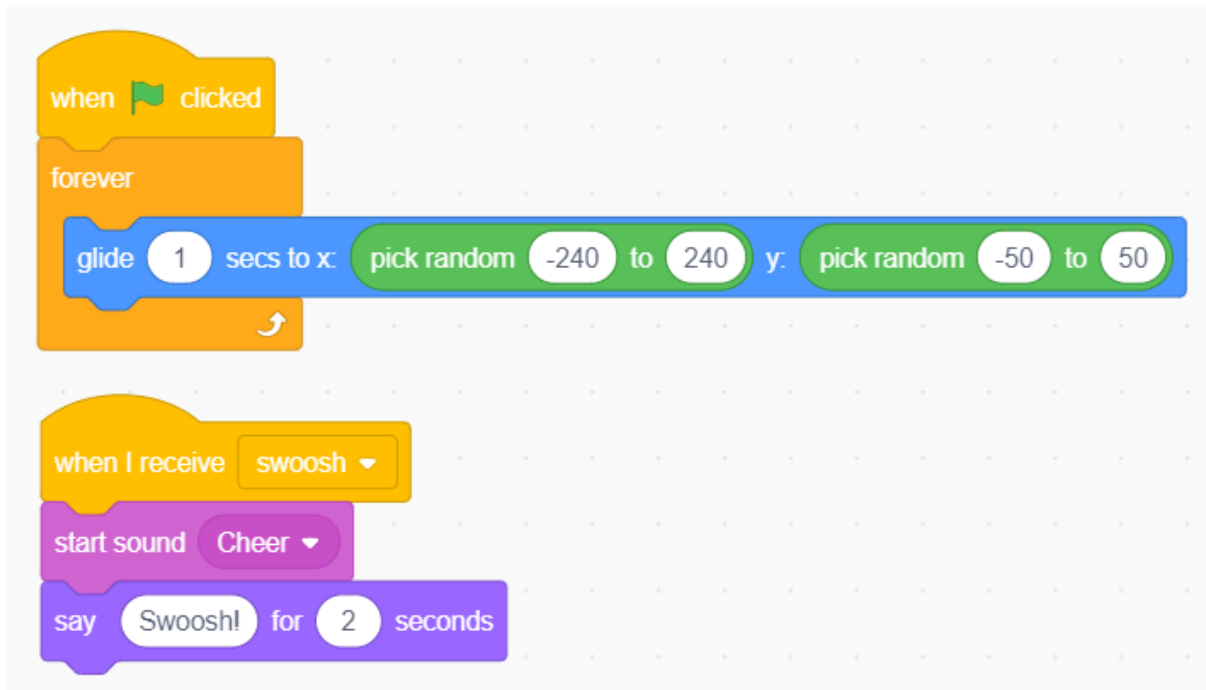
```
when green flag clicked
  set y velocity to 0
  forever loop
    change y by y velocity
    if y position > -130 then
      change y velocity by -2
    if y position < -130 then
      set y to -130
      set y velocity to 0

when up arrow key pressed
  if y position = -130 then
    set y velocity to 20

when green flag clicked
  forever loop
    if key left arrow pressed? then
      next costume
      change x by -10
    if key right arrow pressed? then
      next costume
      change x by 10
```

The image displays two columns of Scratch code blocks. The left column starts with a 'when green flag clicked' block, followed by 'set y velocity to 0'. A 'forever' loop contains 'change y by y velocity', an 'if y position > -130 then' block with 'change y velocity by -2', and another 'if y position < -130 then' block with 'set y to -130' and 'set y velocity to 0'. The right column has a 'when up arrow key pressed' block with an 'if y position = -130 then' block containing 'set y velocity to 20'. Below that is another 'when green flag clicked' block with a 'forever' loop containing two 'if key pressed?' blocks: 'if key left arrow pressed?' with 'next costume' and 'change x by -10', and 'if key right arrow pressed?' with 'next costume' and 'change x by 10'.

## Hoop Code

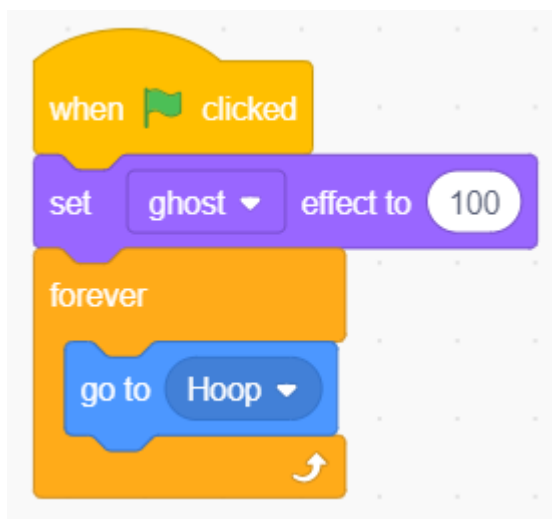


```
when green flag clicked
  forever loop
    glide 1 secs to x: pick random -240 to 240 y: pick random -50 to 50

when I receive swoosh
  start sound Cheer
  say Swoosh! for 2 seconds
```

The code for the Hoop object consists of two event-driven blocks. The first block is triggered when the green flag is clicked and contains a 'forever' loop with a 'glide' block. The glide block moves the hoop to a random x-coordinate between -240 and 240 and a random y-coordinate between -50 and 50 over a duration of 1 second. The second block is triggered when the hoop receives the 'swoosh' message and contains two blocks: 'start sound Cheer' and 'say Swoosh! for 2 seconds'.

## Hitbox Code



```
when green flag clicked
  set ghost effect to 100
  forever loop
    go to Hoop
```

The code for the Hitbox object consists of two event-driven blocks. The first block is triggered when the green flag is clicked and contains a 'set ghost effect to 100' block. The second block is a 'forever' loop containing a 'go to Hoop' block, which repeatedly moves the hitbox to the Hoop object.

## Basketball Code

```
when space key pressed
  set basket made to no
  start sound pop
  go to Cat
  set y velocity to 24
  show
  repeat until y position < -130
    change x by 8
    change y by y velocity
    change y velocity by -2
    turn 6 degrees
  if touching hitbox ? and y velocity < 0 and basket made = no then
    change Player 1 Score by 1
    set basket made to yes
    broadcast swoosh
  hide
when clicked
  set Player 1 Score to 0
  hide
```

The image shows a Scratch script for a basketball game. The main script starts with a 'when space key pressed' event, which sets 'basket made' to 'no', starts a 'pop' sound, moves the 'Cat' sprite to its starting position, sets its 'y velocity' to 24, and shows the sprite. A 'repeat until' loop runs while the 'y position' is greater than -130. Inside the loop, the 'x' position increases by 8, the 'y' position changes by the current 'y velocity', the 'y velocity' decreases by 2, and the sprite turns 6 degrees. An 'if' statement checks if the 'Cat' is touching a 'hitbox', if its 'y velocity' is less than 0, and if 'basket made' is 'no'. If all conditions are true, it increases 'Player 1 Score' by 1, sets 'basket made' to 'yes', and broadcasts a 'swoosh' sound. Finally, the 'Cat' sprite is hidden.