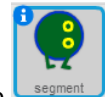
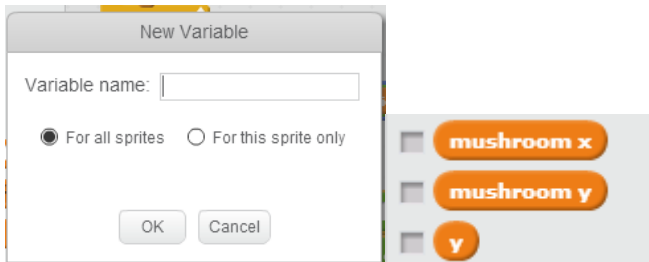


Centipede

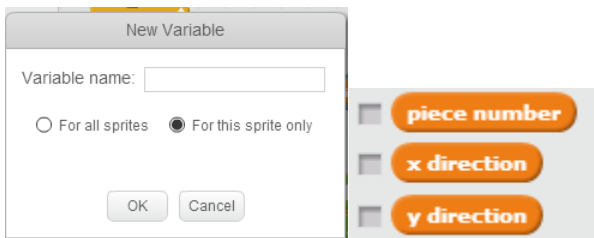
1. Variables

Be careful when making these variables.

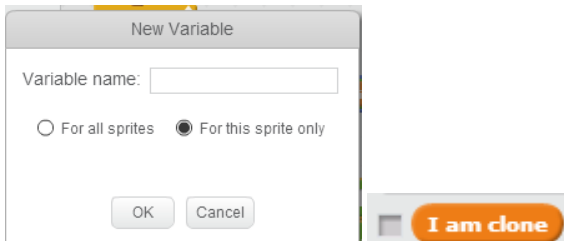
The following variables should be made “For all sprites”



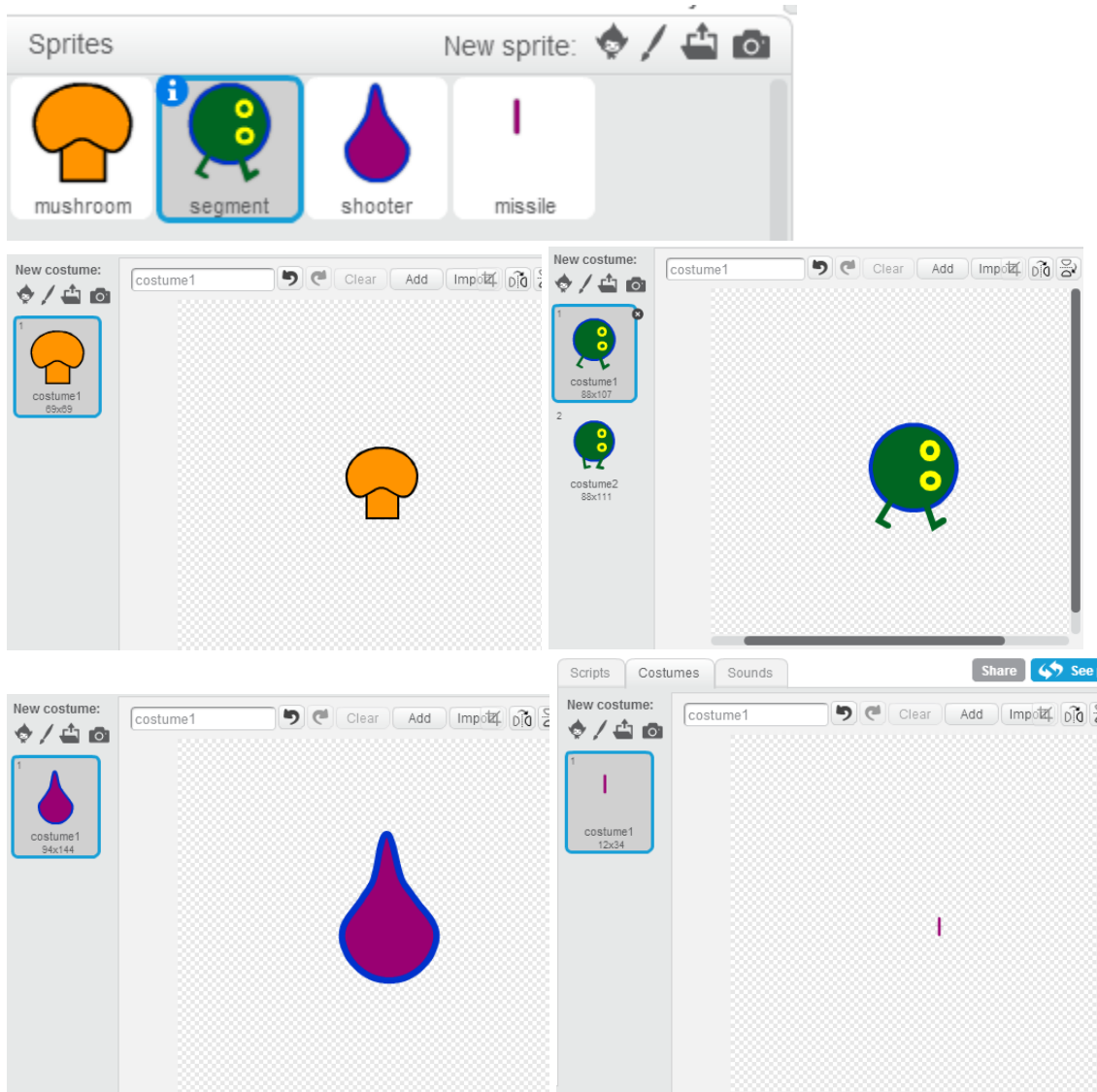
The following variables should be made “For this sprite only” for the “segment” sprite :



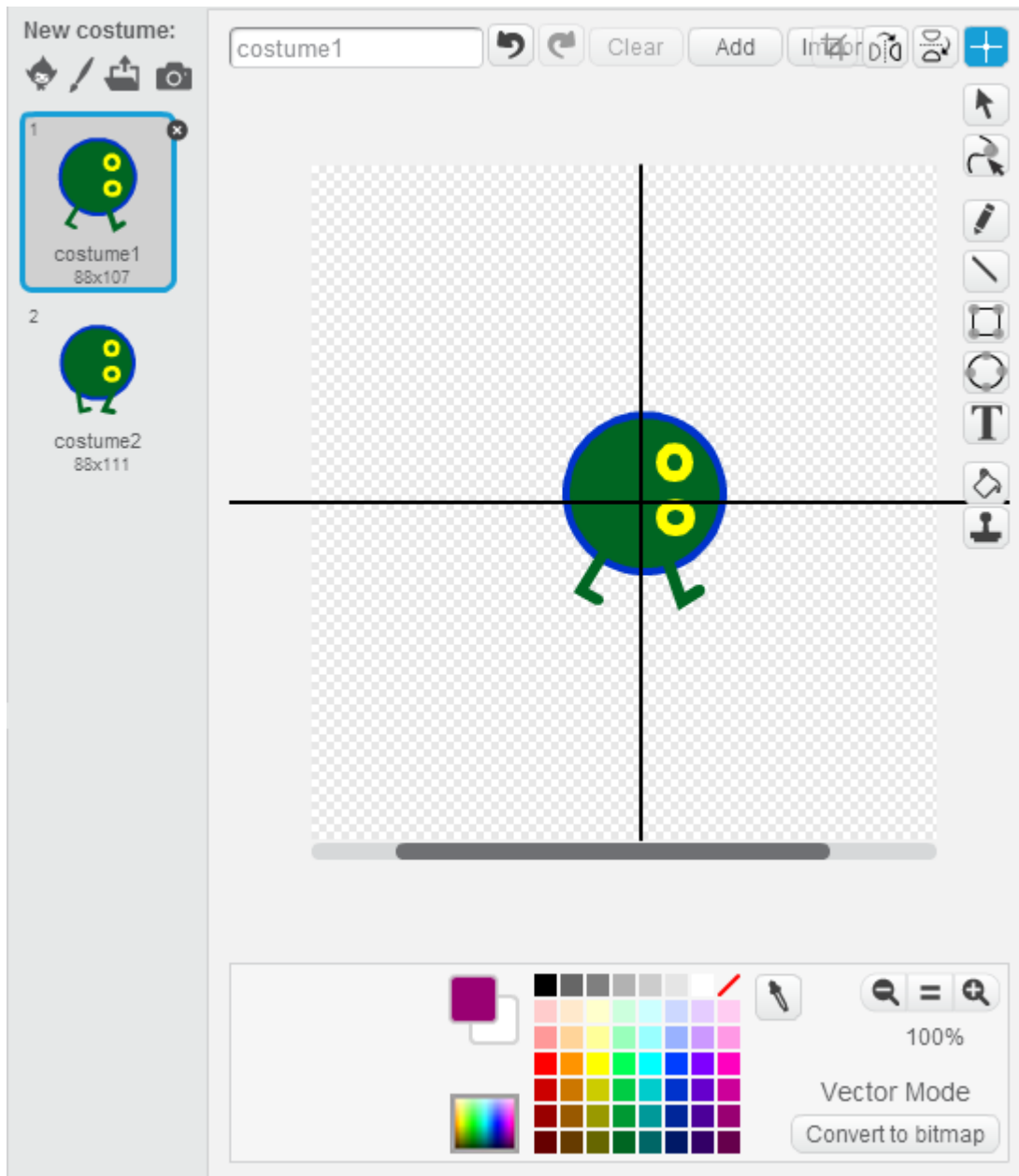
The following variable should be made “For this sprite only” for the “mushroom” sprite :



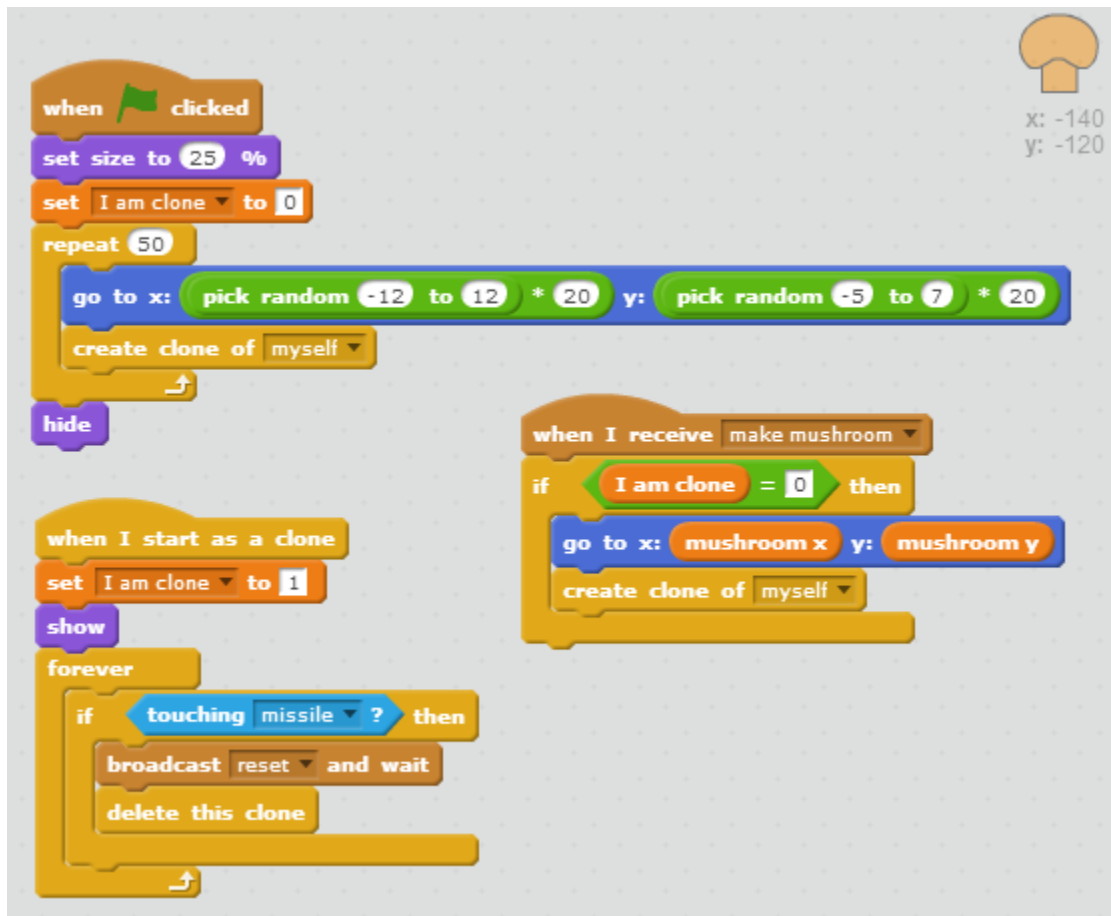
2. Sprite art (draw all using vector mode – paint brush tool)



Remember to check the center of each sprite:



3. "mushroom" sprite scripts



The image displays a Scratch code editor with a mushroom sprite icon in the top right corner, showing its coordinates as x: -140 and y: -120. The code is organized into three main script areas:

- When clicked:** A sequence of blocks including "set size to 25 %", "set I am clone to 0", a "repeat 50" loop containing "go to x: pick random -12 to 12 * 20 y: pick random -5 to 7 * 20" and "create clone of myself", followed by a "hide" block.
- When I start as a clone:** A sequence of blocks including "set I am clone to 1", "show", and a "forever" loop containing an "if touching missile ?" block with "broadcast reset and wait" and "delete this clone" sub-blocks.
- When I receive make mushroom:** An "if I am clone = 0" block containing "go to x: mushroom x y: mushroom y" and "create clone of myself".

4. "segment" sprite scripts

```
when clicked
  set size to 15 %
  set piece number to 0
  repeat 20
    create clone of myself
    change piece number by 1
  hide
  forever
    broadcast step and wait

when I receive step
  point in direction 90 * x direction
  change x by x direction * 4
  next costume
  if x position mod 12 = 0 then
    if touching mushroom ? or touching edge ? then
      Turn

define Turn
  set x direction to x direction * -1
  change y by y direction * 20
  if y position < -155 or y direction > 0 and y position > -100 then
    set y direction to y direction * -1

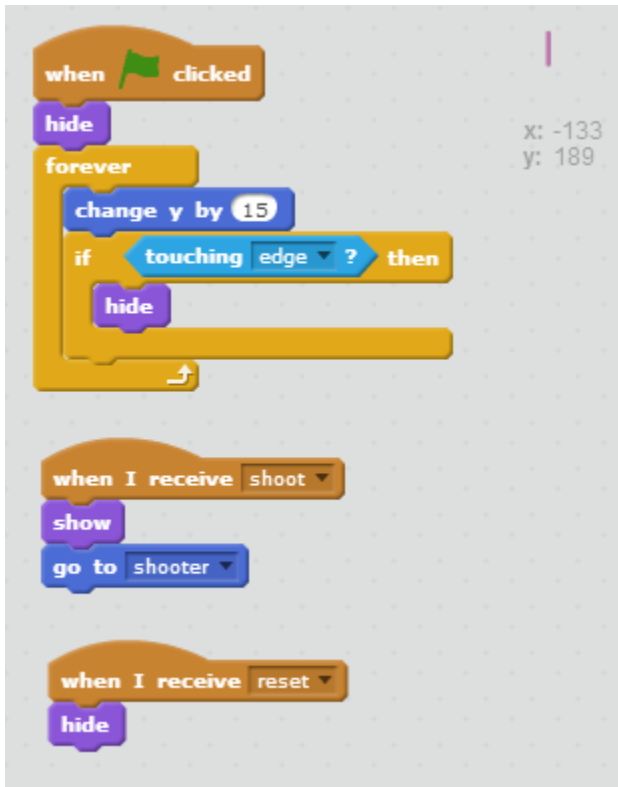
when I start as a clone
  show
  go to x: -240 + piece number * 12 y: 160
  set x direction to 1
  set y direction to -1
  forever
    if touching missile ? then
      set mushroom x to x position
      set mushroom y to y position
      broadcast reset and wait
      broadcast make mushroom and wait
      delete this clone
```

The image displays a Scratch script editor with three main script areas. The top-left script, triggered by a 'when clicked' event, sets the sprite's size to 15%, initializes a 'piece number' to 0, and enters a 'repeat' loop of 20 iterations. In each iteration, it creates a clone of itself and increments the 'piece number' by 1. After the loop, the sprite is hidden, and a 'forever' loop broadcasts a 'step' message and waits. The bottom-left script, triggered by receiving a 'step' message, calculates a new direction based on the current 'x direction', moves the sprite 4 units in that direction, and changes to the next costume. It then checks if the x-position is a multiple of 12. If so, it checks for collisions with a 'mushroom' or the 'edge'. If a collision occurs, it calls a 'Turn' function. The 'Turn' function is defined below and rotates the sprite 180 degrees by multiplying the 'x direction' by -1 and moving it 20 units in the 'y direction'. It also checks for a boundary condition: if the 'y position' is less than -155 or the 'y direction' is greater than 0 and the 'y position' is greater than -100, it multiplies the 'y direction' by -1. The top-right script, triggered by 'when I start as a clone', shows the clone, moves it to a specific x and y coordinate (calculated as -240 + piece number * 12, y: 160), sets its initial direction (x: 1, y: -1), and enters a 'forever' loop. In this loop, it checks if it is touching a 'missile'. If so, it records the current 'mushroom' x and y positions, broadcasts 'reset' and 'make mushroom' messages, and then deletes itself.

5. "shooter" sprite scripts



6. "missile" sprite scripts



7. Additional challenges:

- Add some sound effects.
- In the real Centipede game, you have to shoot the mushrooms about four times before they disappear. Make this change.
- In the real Centipede game, another centipede comes out after a while, and definitely after you clear all the segments. Make this change.
- In the real Centipede game, a spider comes out to threaten you once in a while. Add the spider.
- In the real Centipede game, a character drops down to replenish the mushrooms if you clear too many of them. Add this.