

# **Unit 4**

## **Session 2**

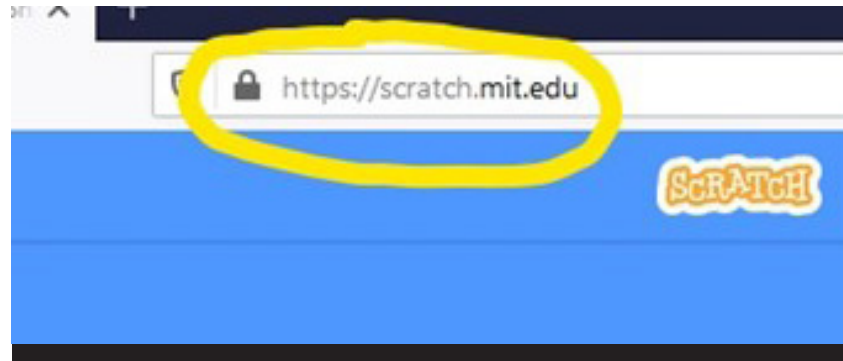
# **Maze**

## **Handout**



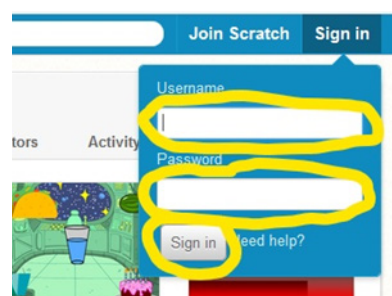
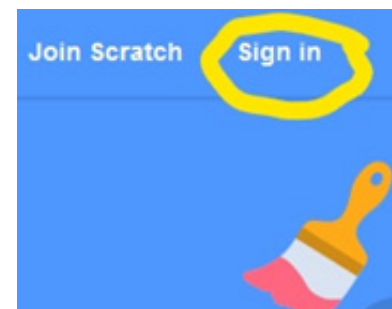
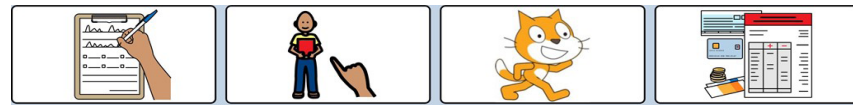
1

Go to the Scratch at <https://scratch.mit.edu/>



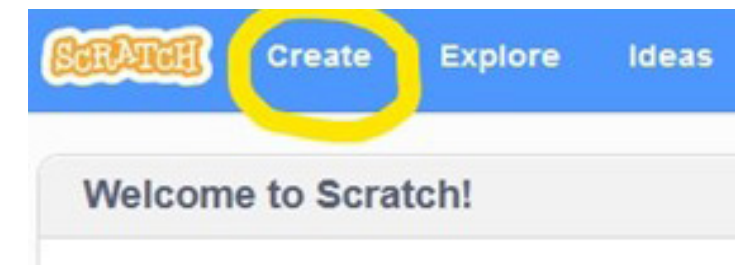
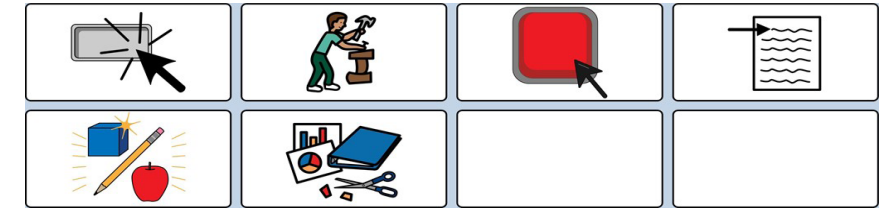
2

Sign into your account.



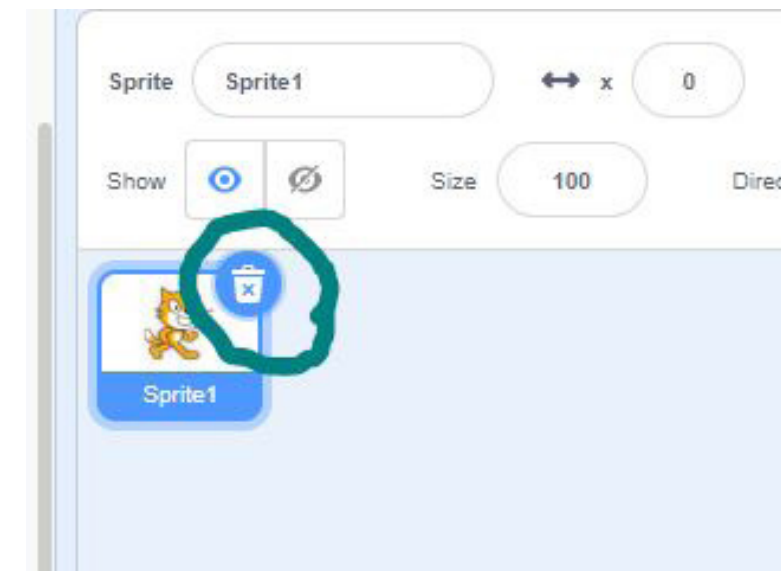
3

Click "create" button to start new project.



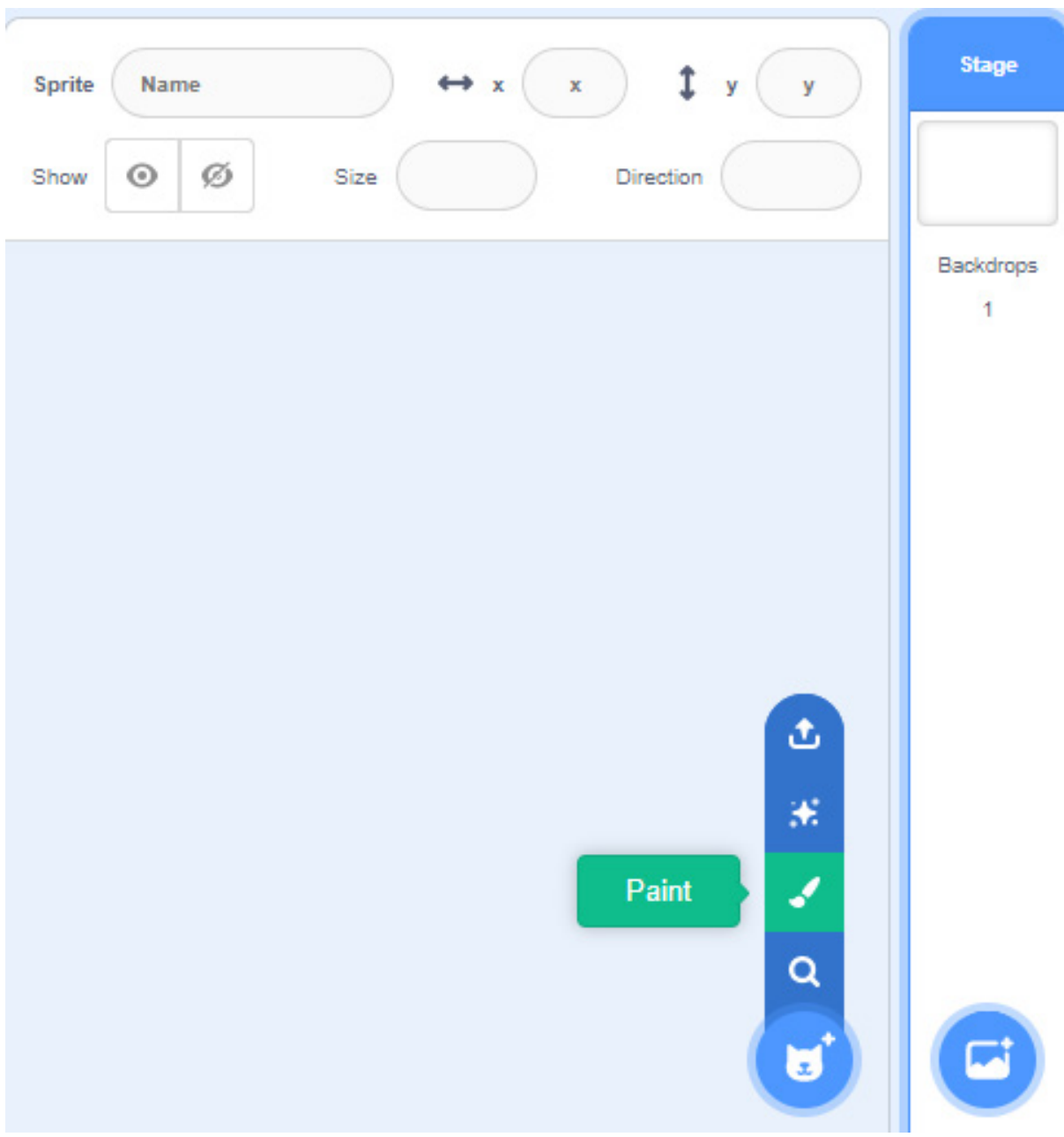
4

Tap on "trash" icon on the top left corner of the "Cat" sprite/character to delete this sprite.



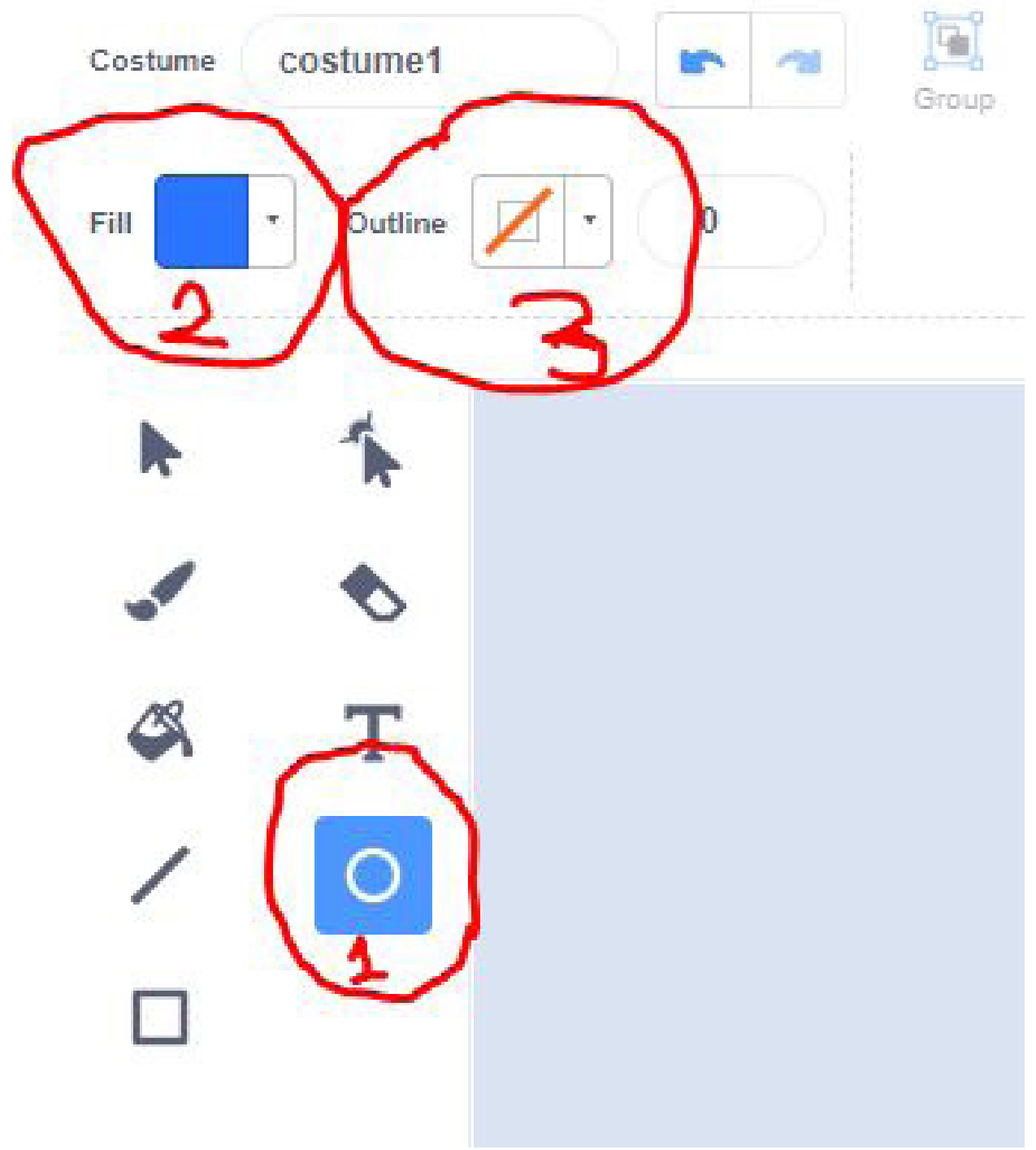
5

Mover over to the “cat” icon on the bottom left corner of the Sprite panel to tap on the paint brush icon to create a new sprite.



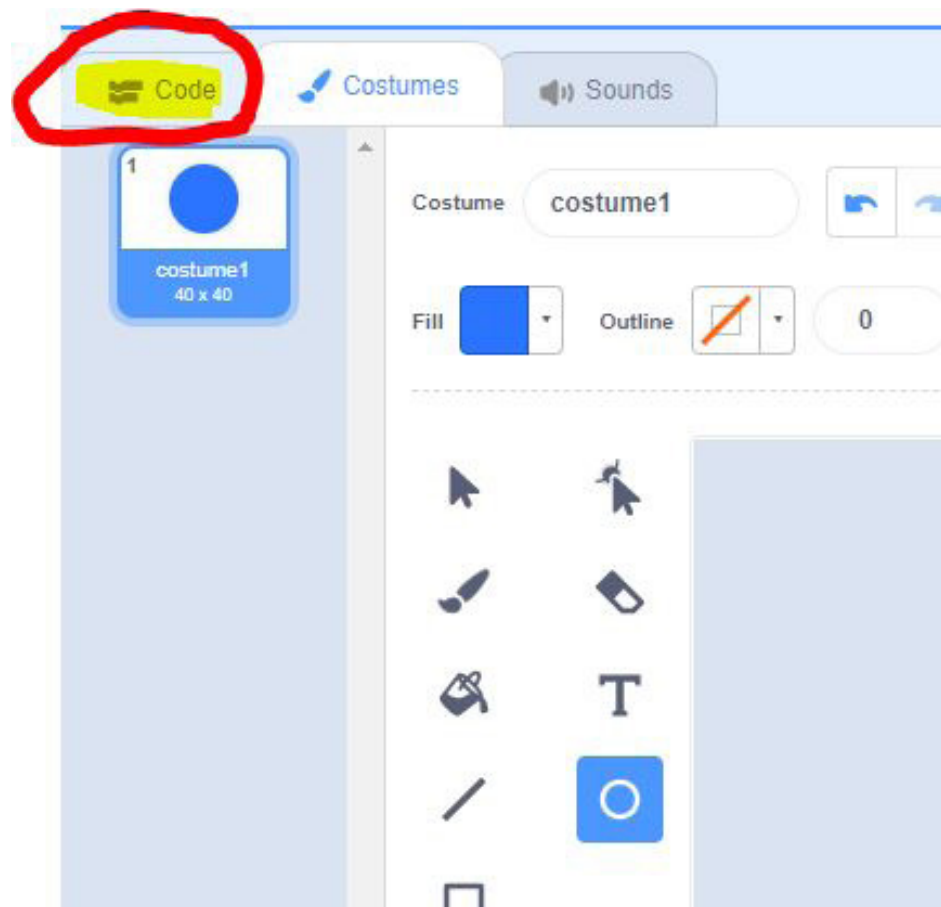
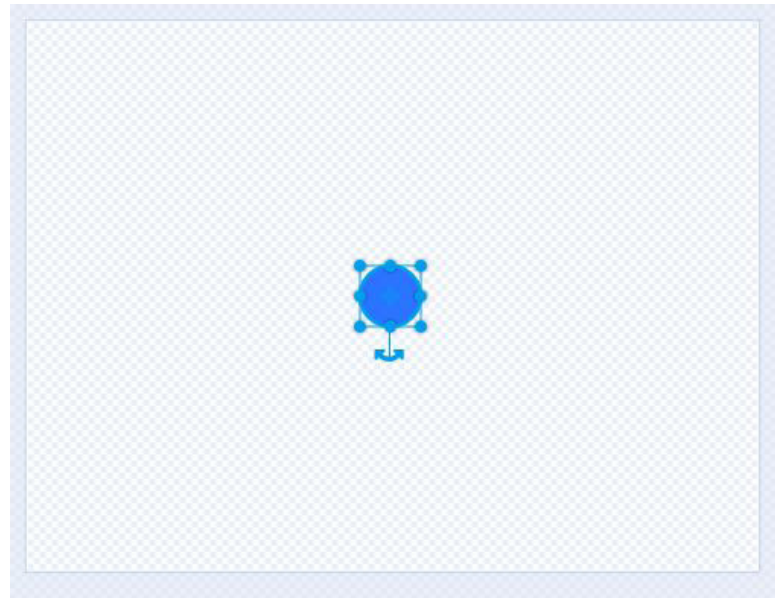
6

In the paint panel to create a new costume, (1) choose the Circle tool, (2) pick a fill color you like and record the color code for this color, and (3) choose an outline color or disable the outline.



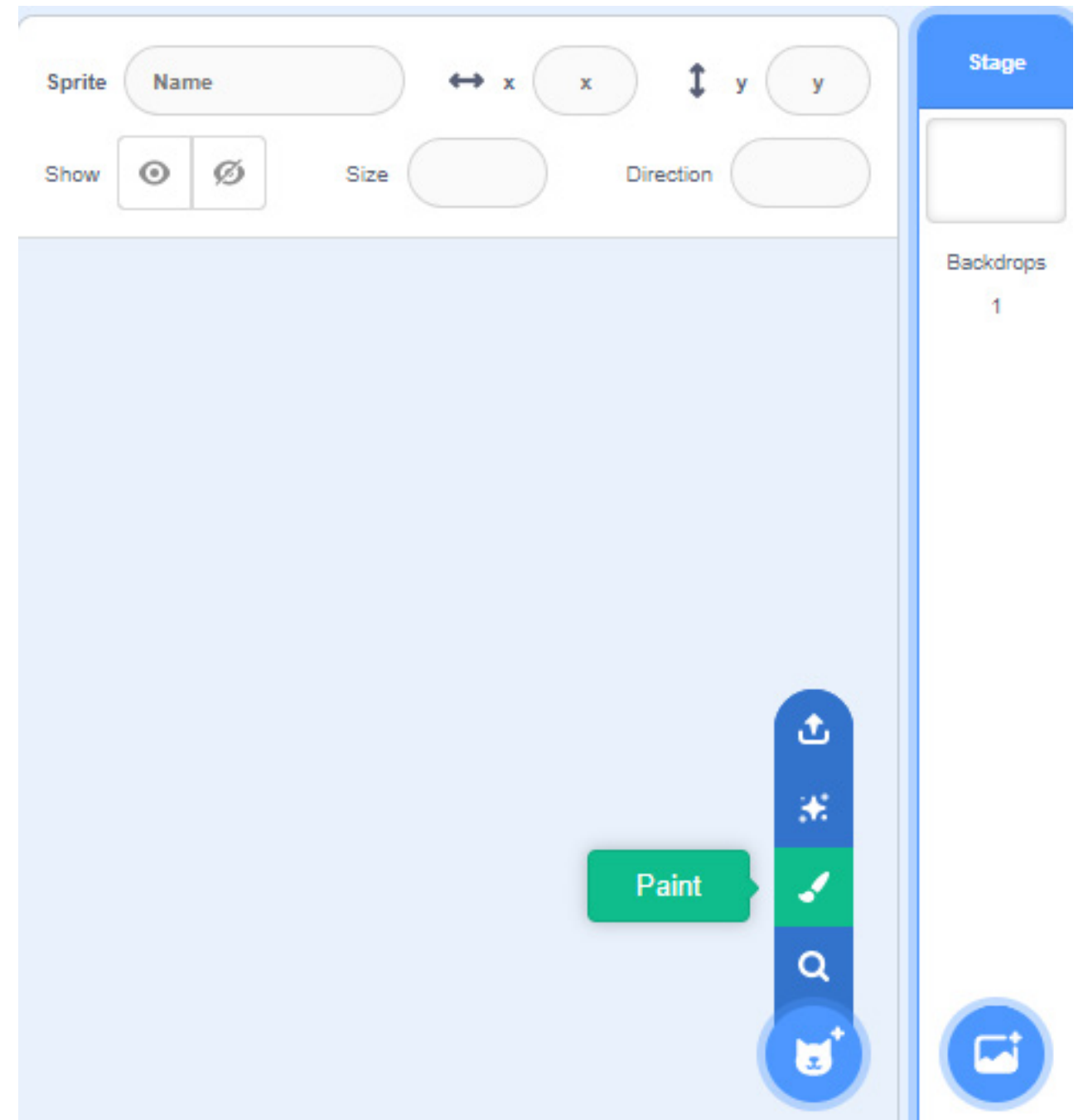
7

Go to the center of the screen and draw a circle, and when done tap on the "Code" tab to go back to the Scratch blocks.



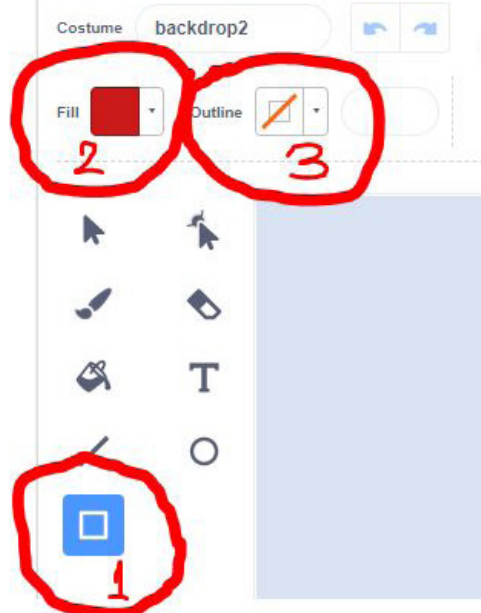
8

Move over to the "Backdrop" icon on the bottom right corner of the screen, and tap on the Paint icon to paint a new backdrop



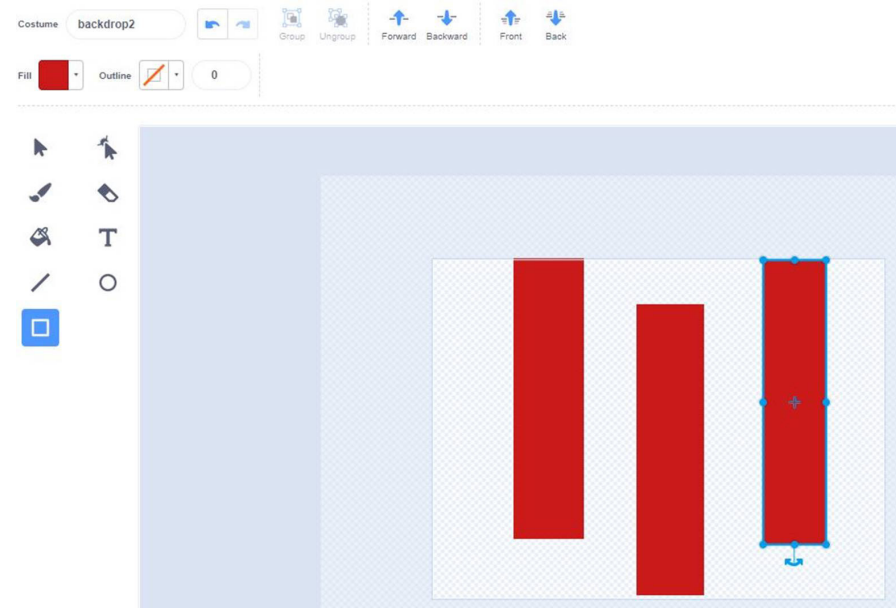
9

In the paint window, (1) choose rectangular tool, (2) change the fill color, (3) and pick an outline color or disable the outline.



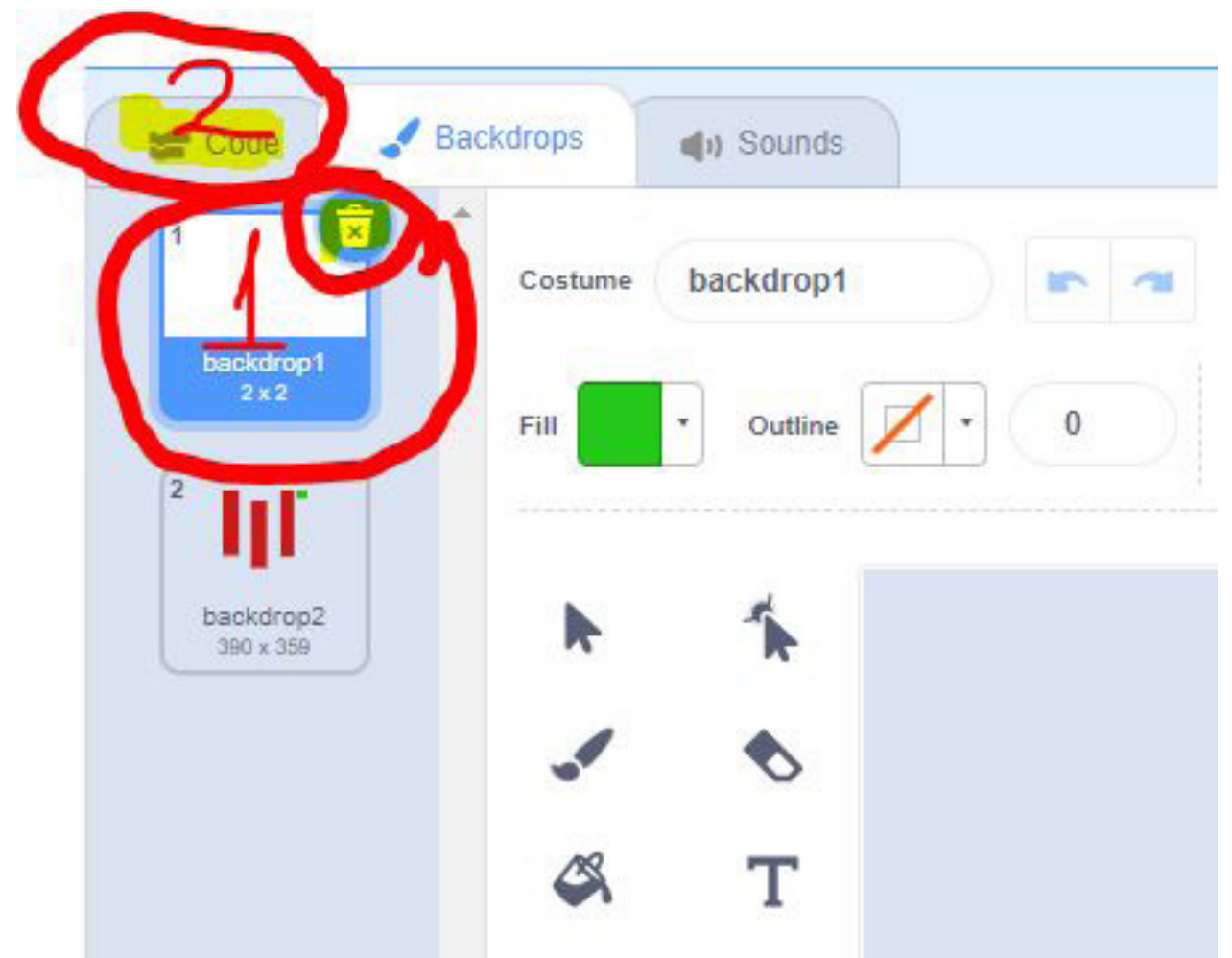
10

On the main window, draw the maze leaving enough space between bars for the sprite (the circular shape) to go through.



11

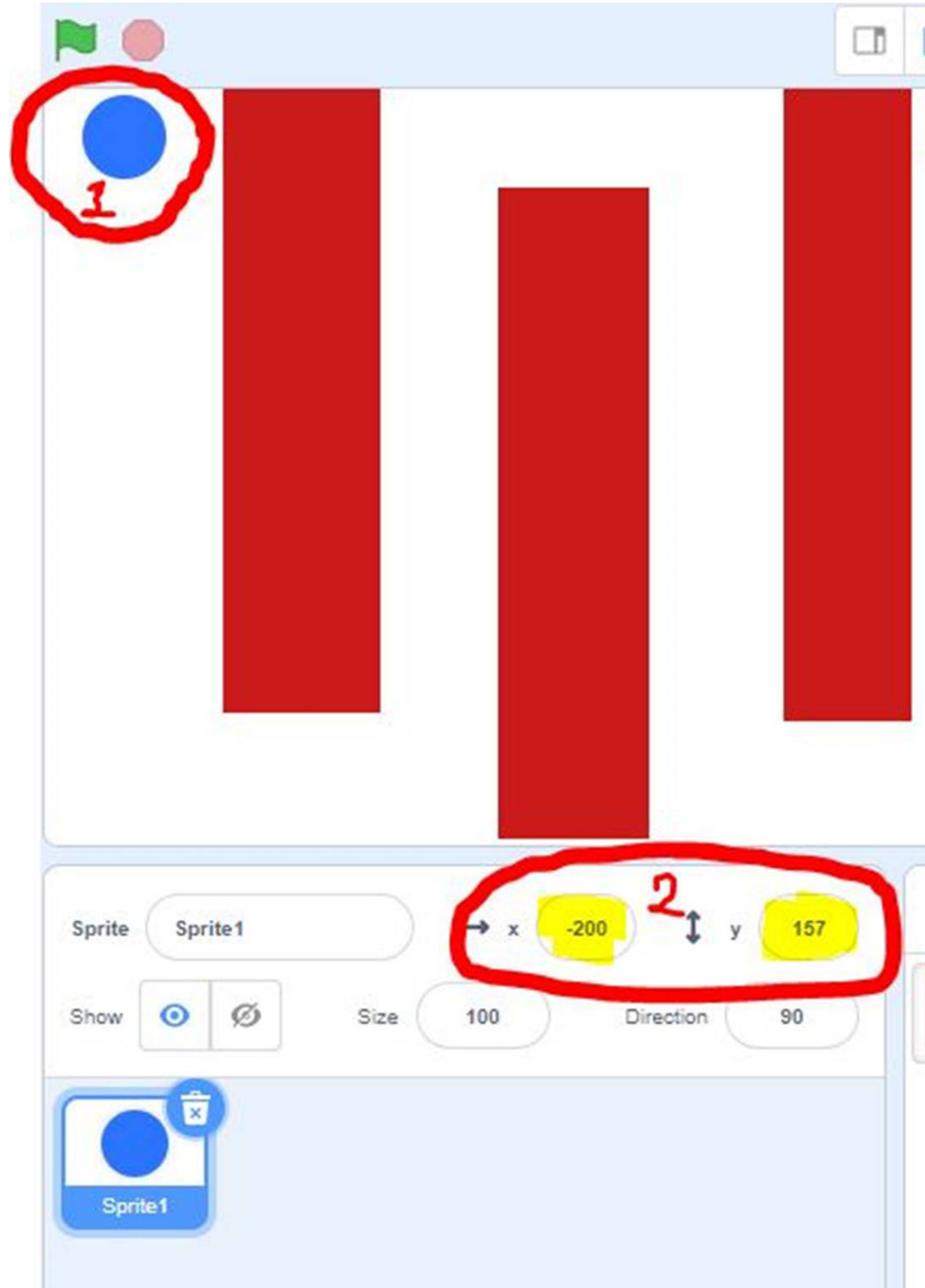
(1) Select "backdrop1" to delete this empty backdrop by clicking on the trash icon at the top right corner, and (2) tap on the Code to go back to the Scratch blocks





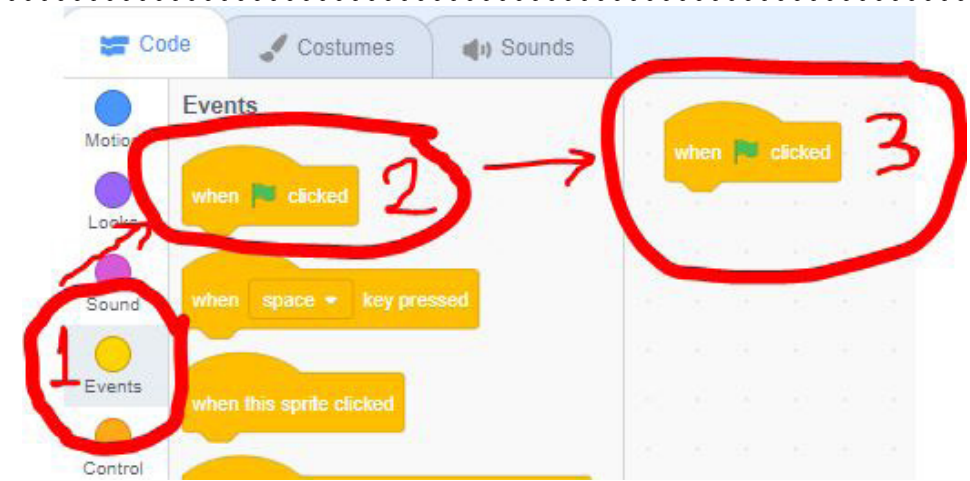
12

- (1) On the stage, move the sprite to the beginning of the maze, and
- (2) record the x and y position of the sprite at this location.



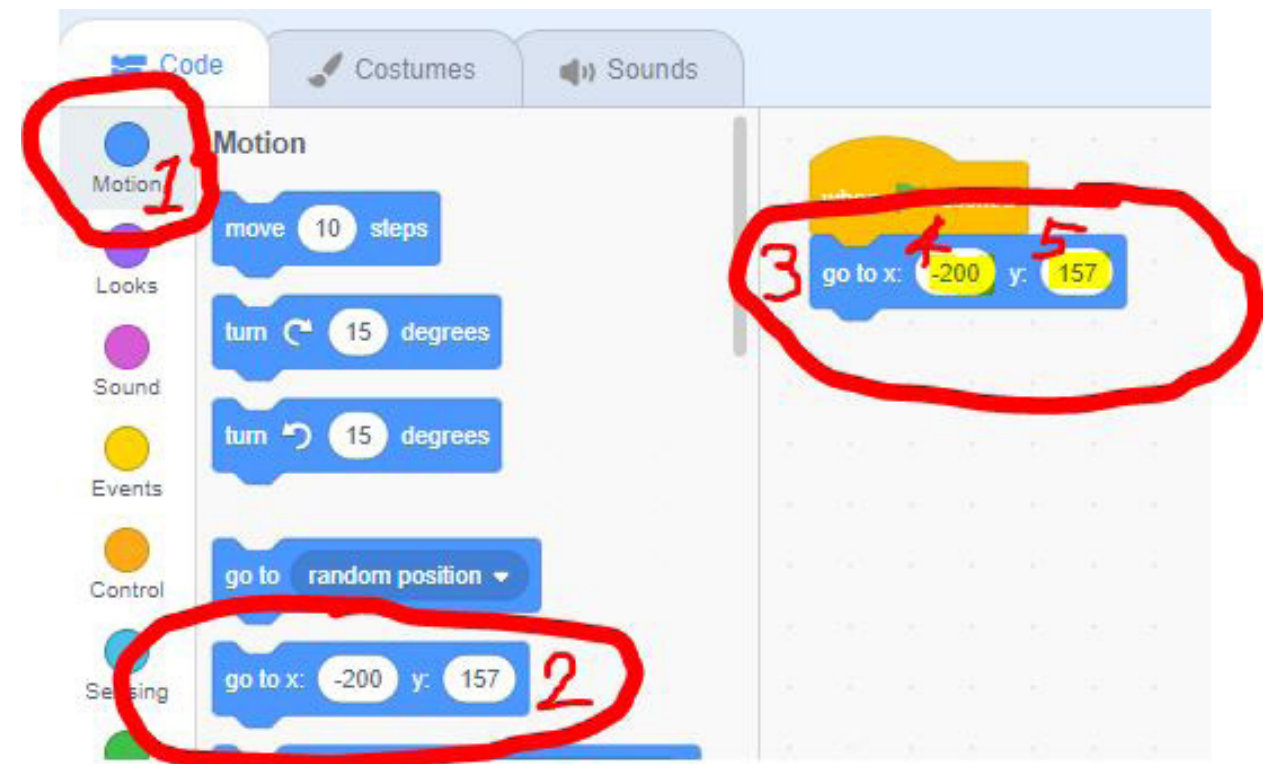
13

- (1) Tap on "Events" block category,
- (2) grab "when flag clicked" block and
- (3) drop it into the scripting area



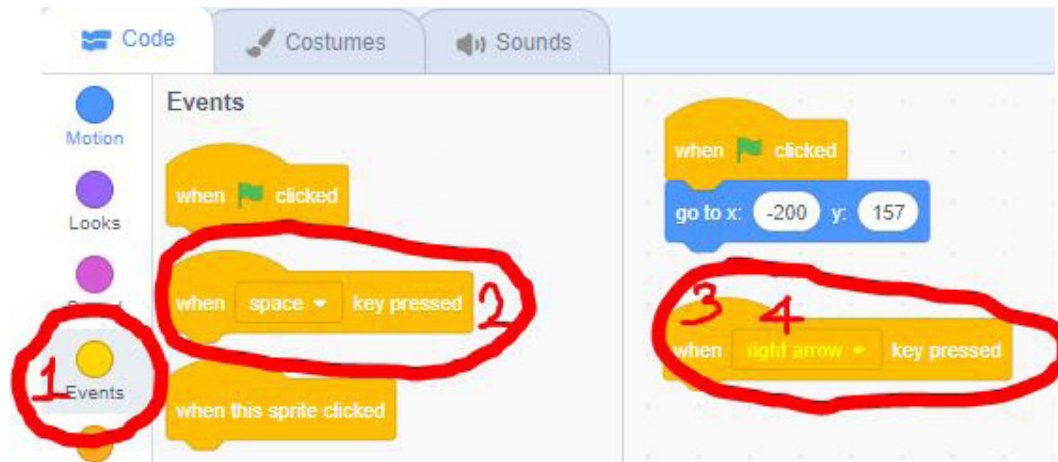
14

- (1) Tap on the "Motion" block category,
- (2) grab "go to x: y:" block and
- (3) drop it under "when flag clicked" block, and
- (4)(5) make sure the x and y position values are set to the values that you recorded in the previous step.



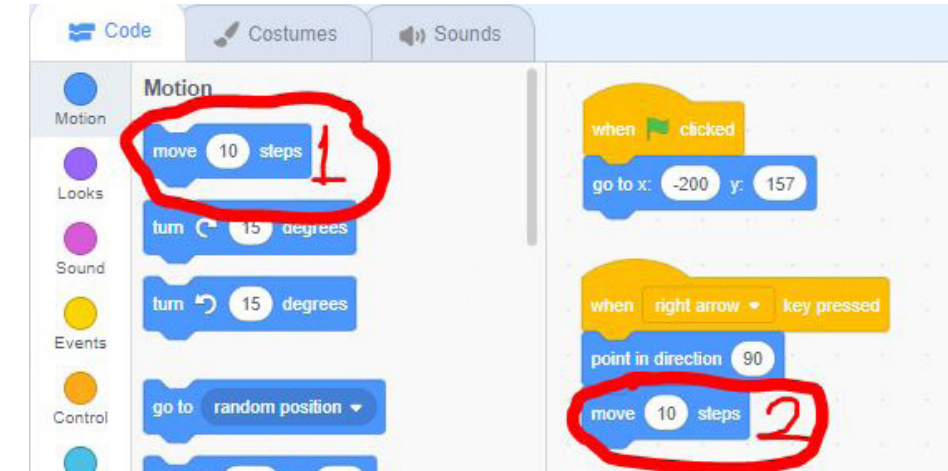
15

- 1) Tap on "Events" block category,
- (2) grab "when space key pressed" block,
- (3) drag and drop it into the scripting area, and
- (4) change the selected drop-down menu option "space" to "right arrow".



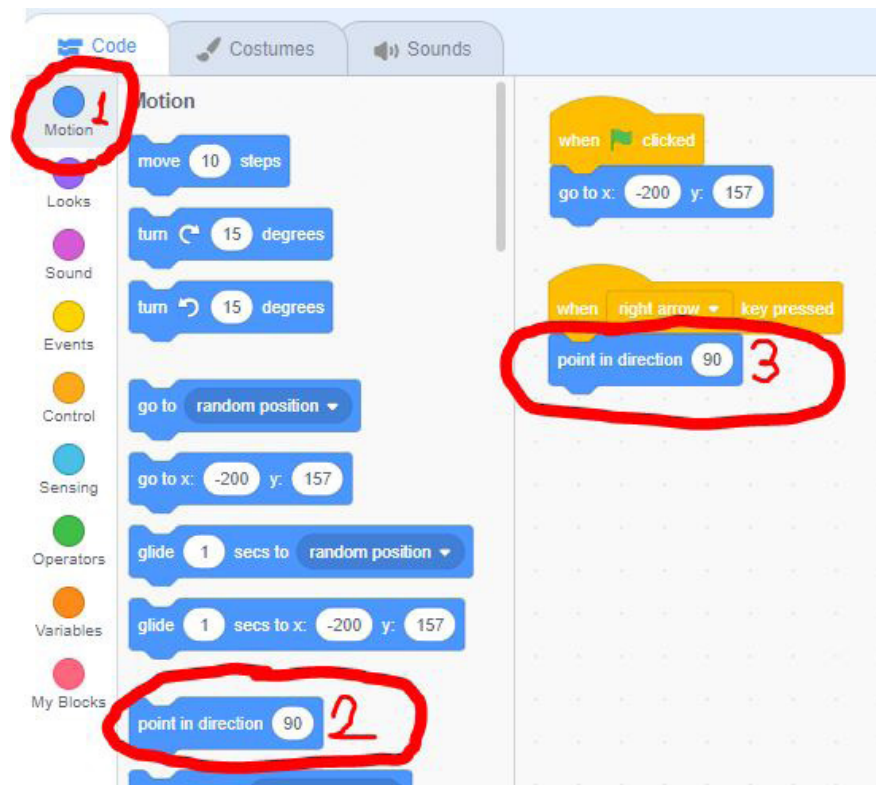
17

- Within the same "Motion" block category,
- (1) grab "move 10 steps" block,
- (2) drop it under "point in direction 90" block.



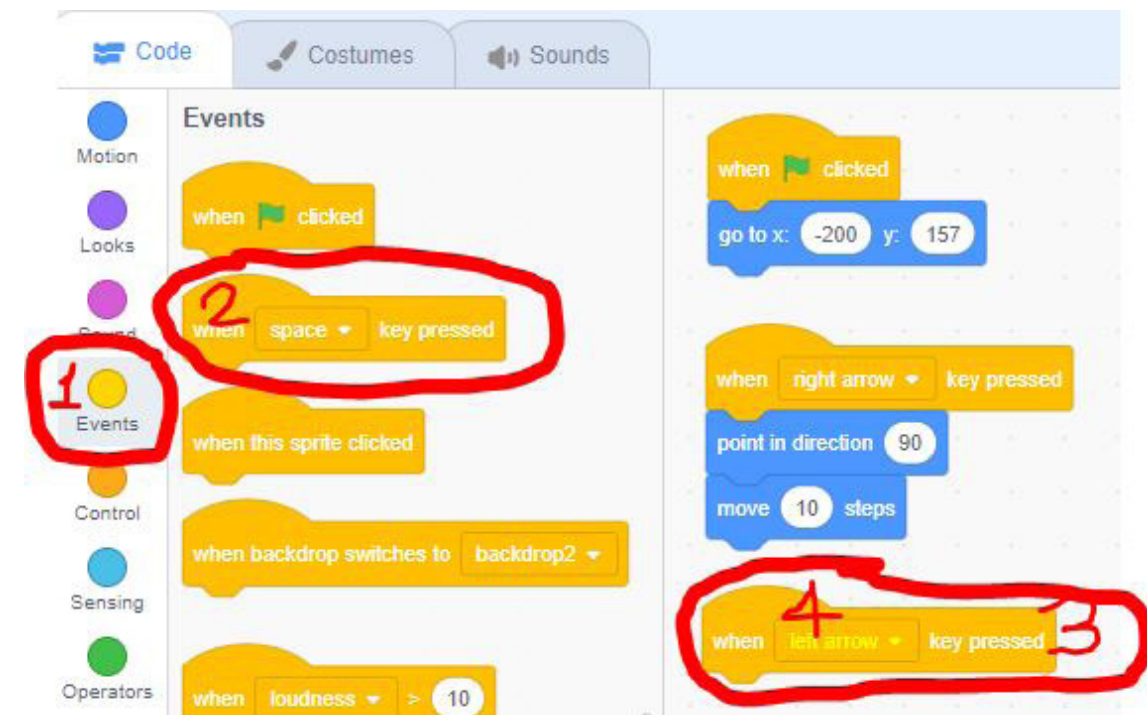
16

- (1) Tap on "Motion" block category,
- (2) grab "point in direction 90" block, and
- (3) drop it under "when right arrow key pressed" block.



18

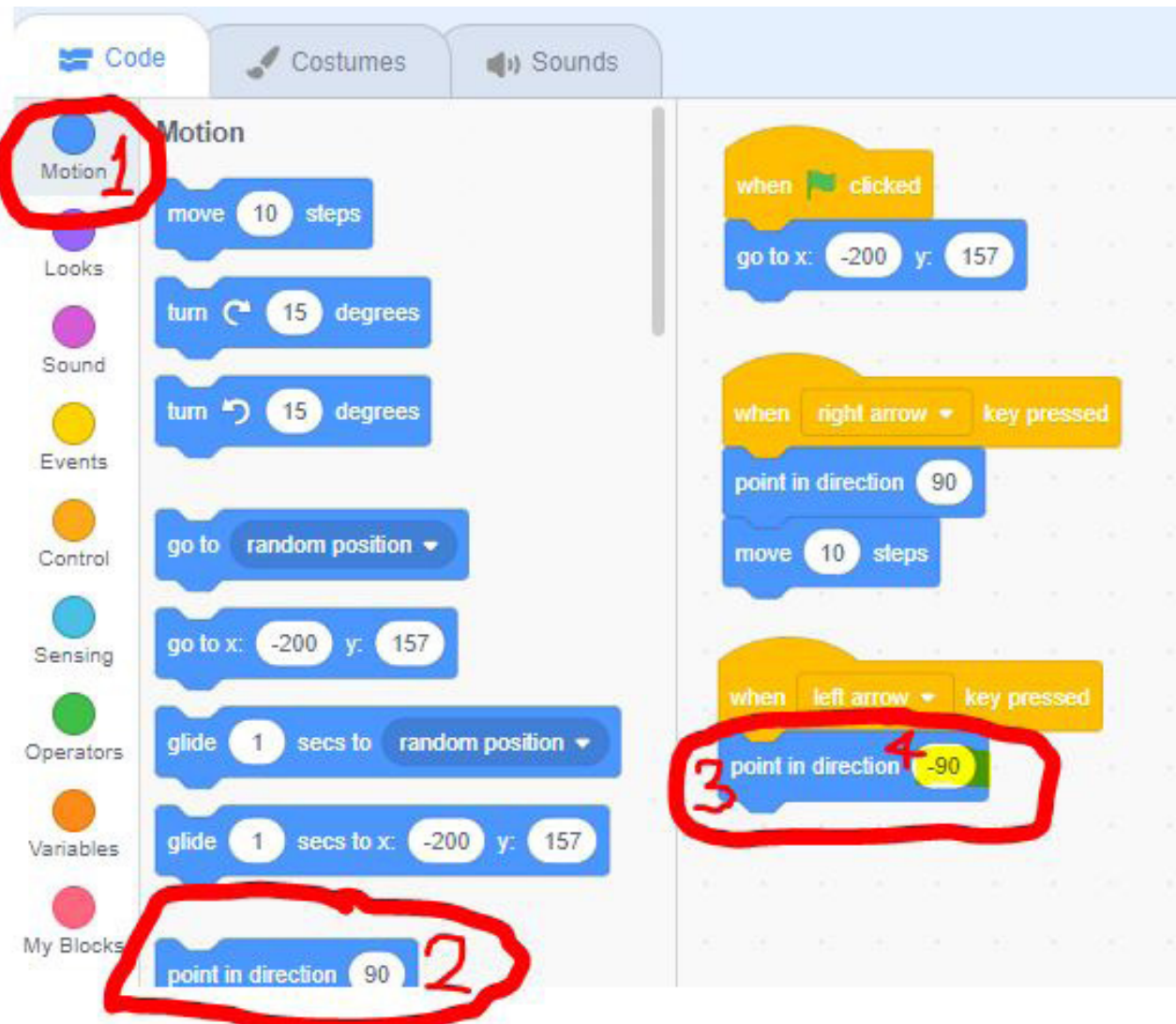
- (1) Tap on "Events" block category,
- (2) grab "when space key pressed" block,
- (3) drag and drop it into the scripting area, and
- (4) change the selected drop-down menu option "space" to "left arrow".





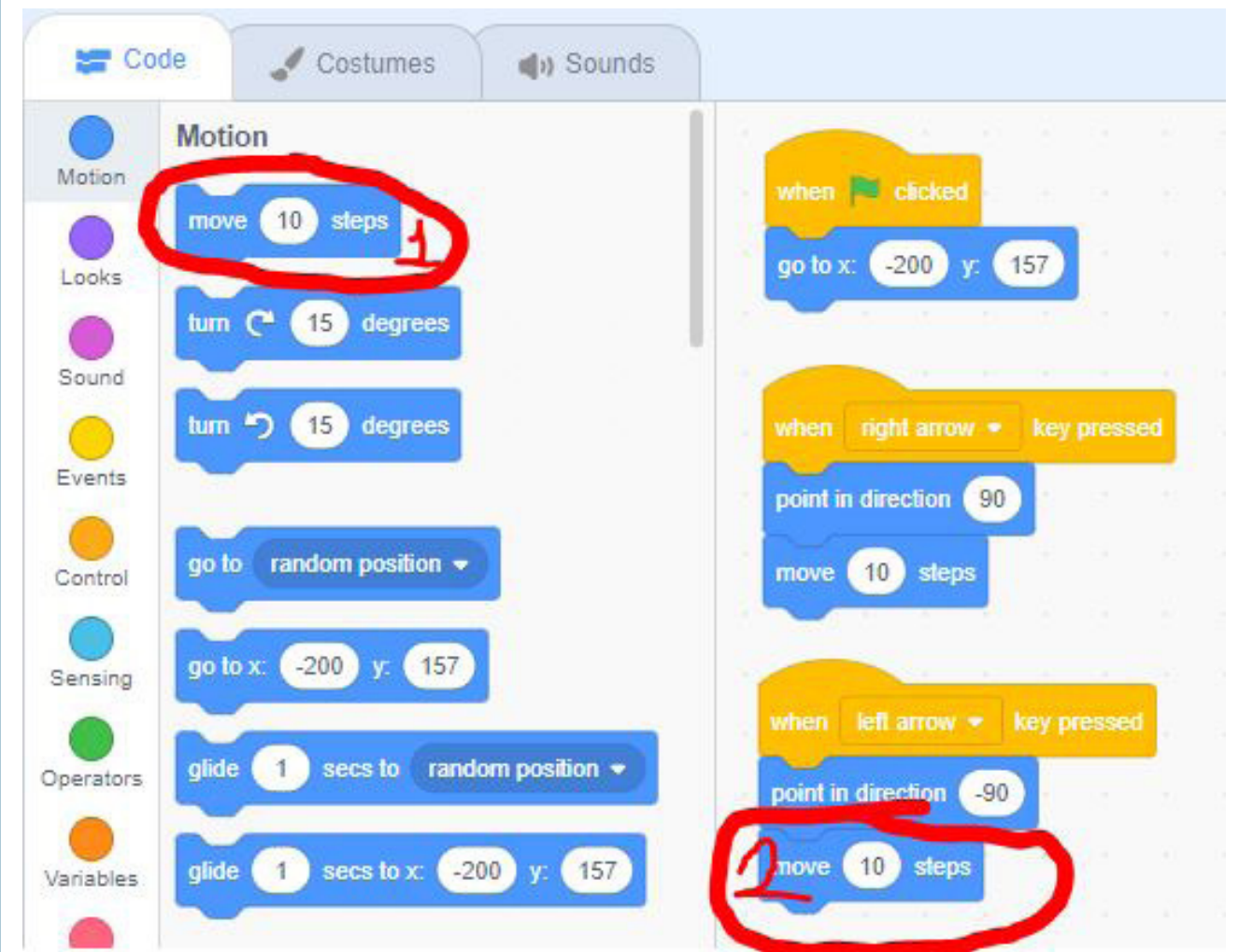
19

(1) Tap on "Motion" block category,  
 (2) grab "point in direction 90" block, (3) drop it under "when left arrow key pressed" block, and (4) change the value "90" to "-90".



20

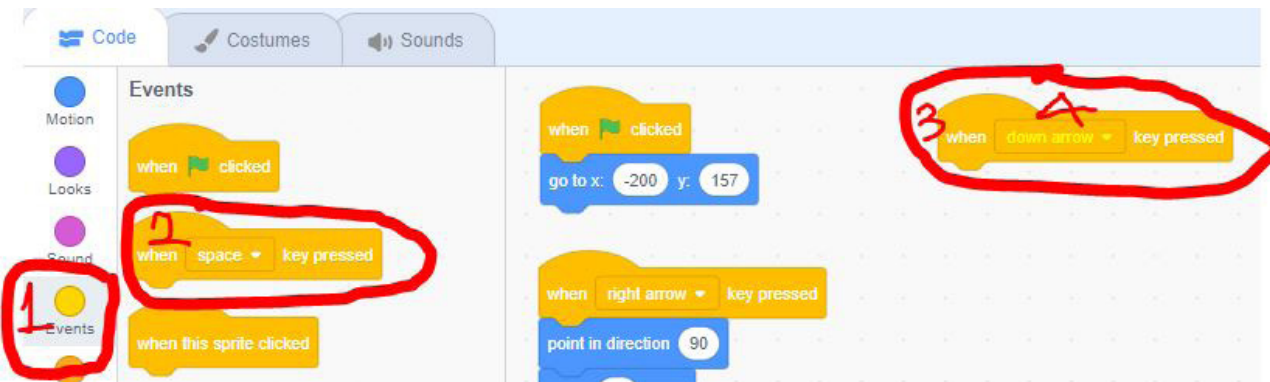
Within the same "Motion" block category,  
 (1) grab "move 10 steps" block,  
 (2) drop it under "point in direction -90" block.





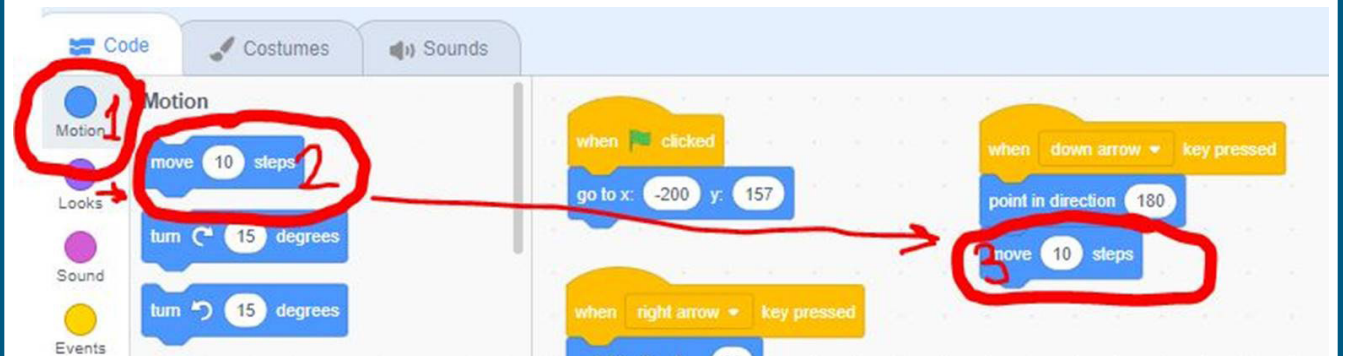
21

- (1) Tap on "Events" block category,
- (2) grab "when space key pressed" block,
- (3) drag and drop it into the scripting area, and
- (4) change the selected drop-down menu option "space" to "down arrow".



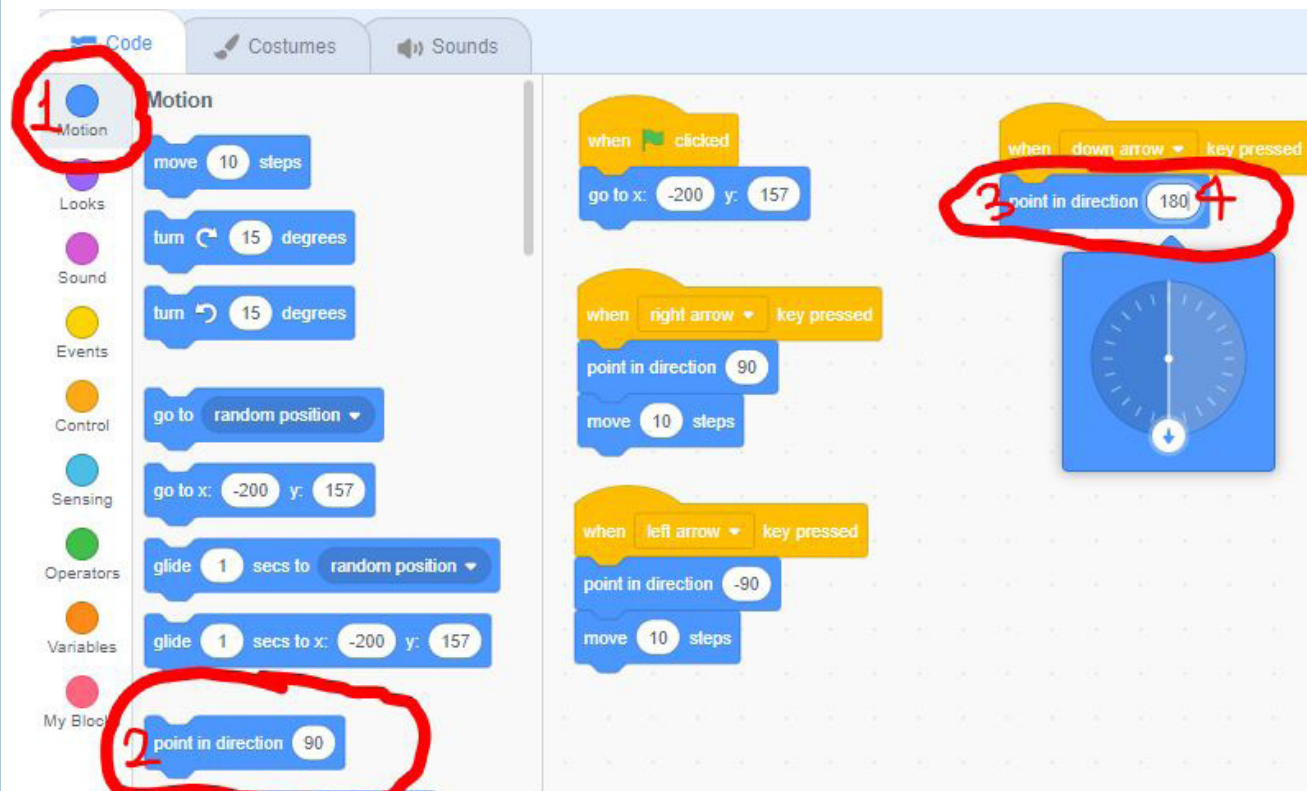
23

- Within the same "Motion" block category,
- (1) grab "move 10 steps" block,
- (2) drop it under "point in direction 180" block.



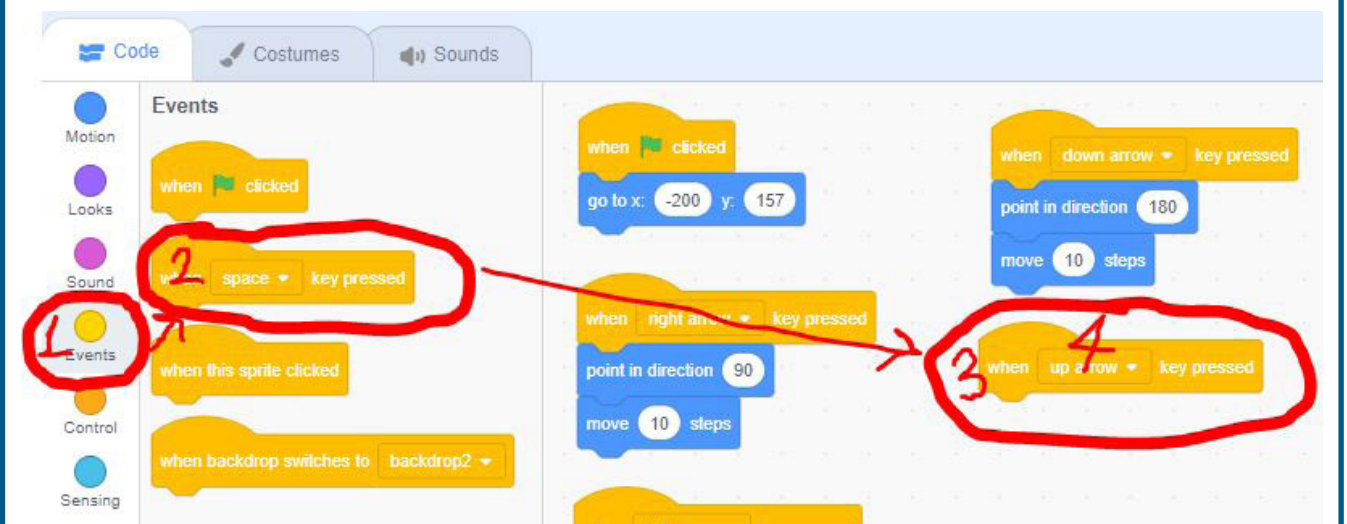
22

- (1) Tap on "Motion" block category,
- (2) grab "point in direction 90" block,
- (3) drop it under "when left arrow key pressed" block, and
- (4) change the value "90" to "-90".



24

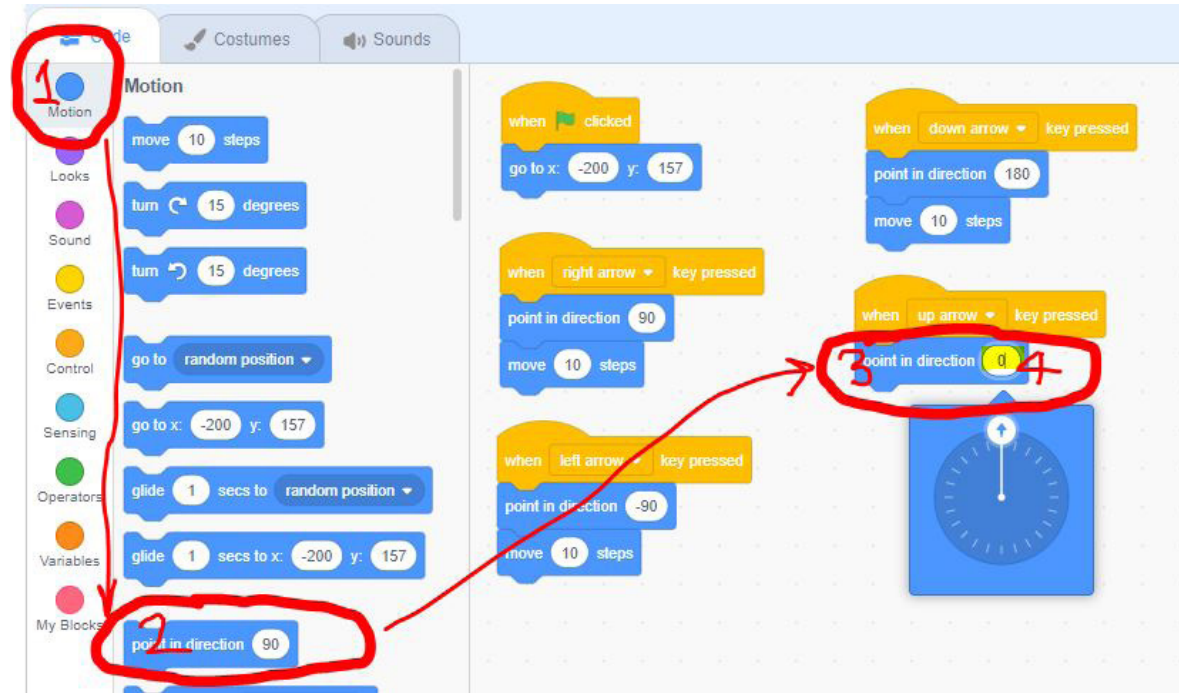
- (1) Tap on "Events" block category,
- (2) grab "when space key pressed" block,
- (3) drag and drop it into the scripting area, and
- (4) change the selected drop-down menu option "space" to "up arrow".





25

- (1) Tap on "Motion" block category,
- (2) grab "point in direction 90" block,
- (3) drop it under "when left arrow key pressed" block, and (4) change the value "90" to "0".



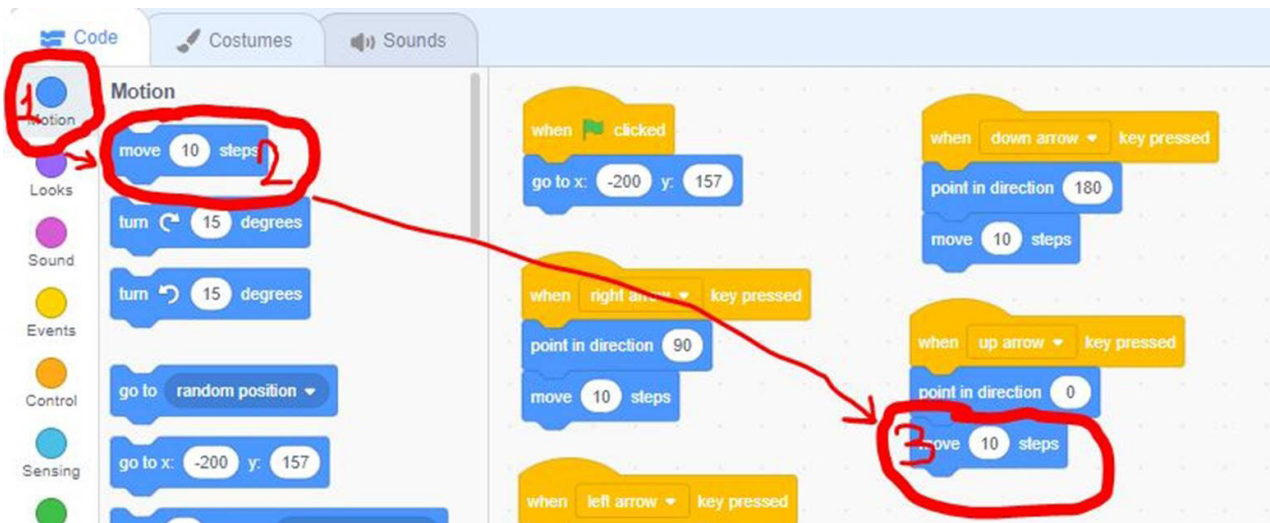
27

- (1) Tap on "Events" block category,
- (2) grab "when flag clicked" block and
- (3) drop it into the scripting area.



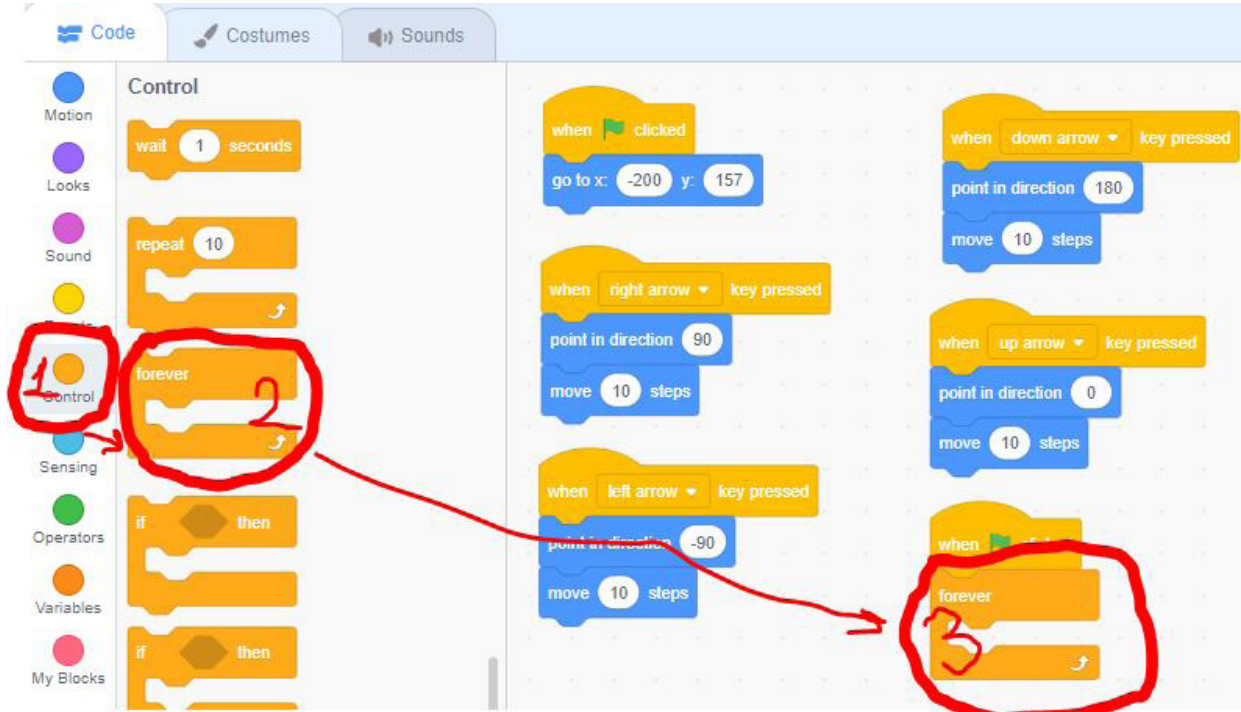
26

- Within the same "Motion" block category,
- (1) grab "move 10 steps" block,
- (2) drop it under "point in direction -90" block.



28

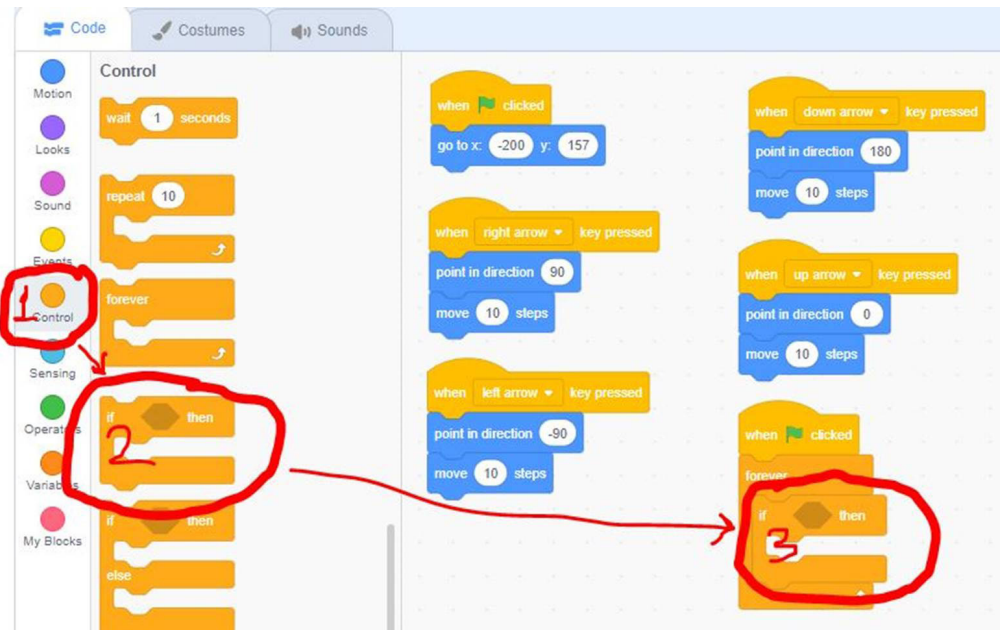
- (1) Tap on "Control" block category,
- (2) grab "forever" block and
- (3) drop it under the "when flag clicked" block.





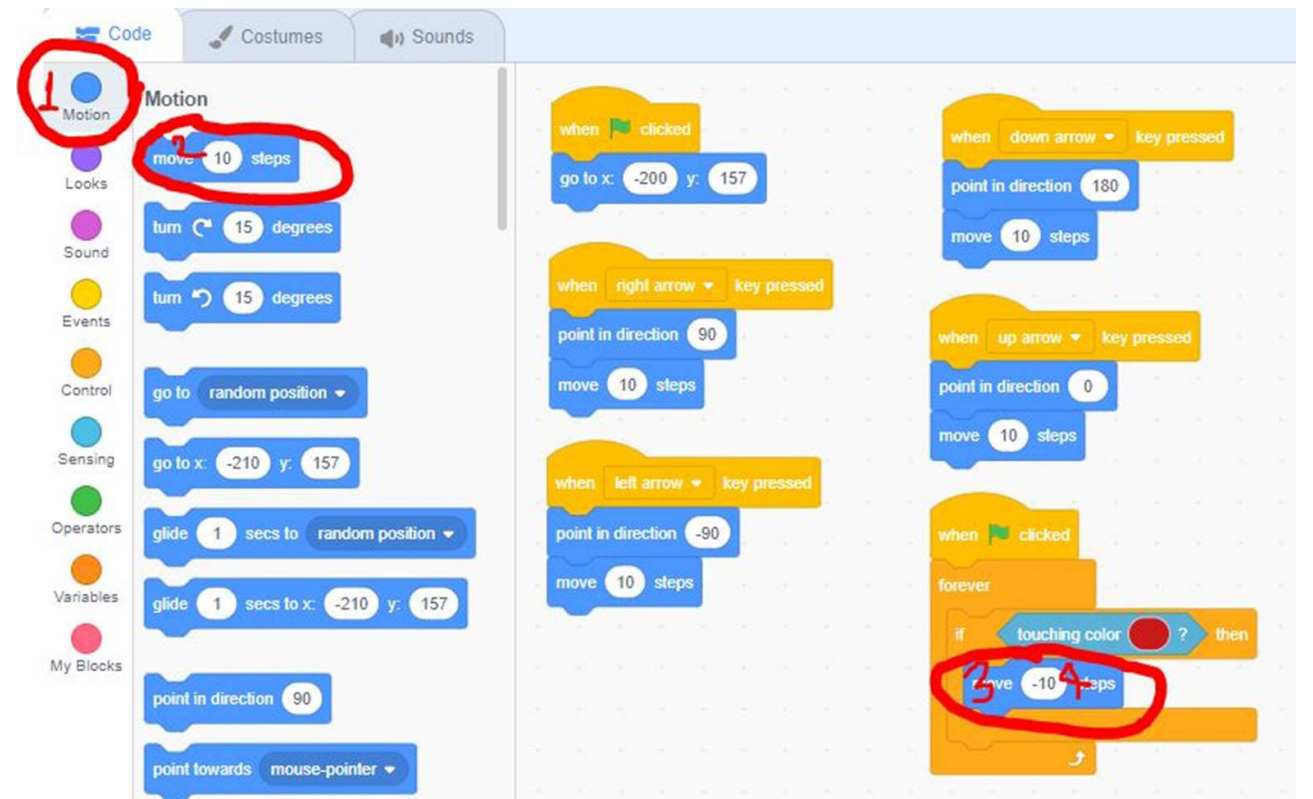
29

- (1) In the "Control" block category,
- (2) grab "if-then" block and (3) drop it within the "forever" block.



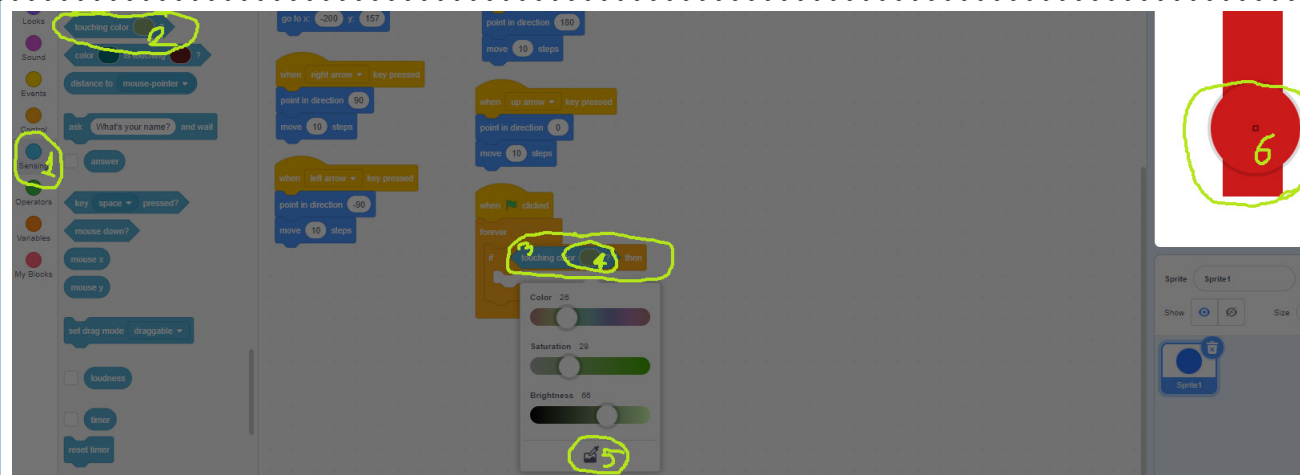
31

- (1) Tap on the "Motion" block category,
- (2) grab "move 10 steps" block,
- (3) drop it within "if touching color then" block, and change the value "10" to "-10".



30

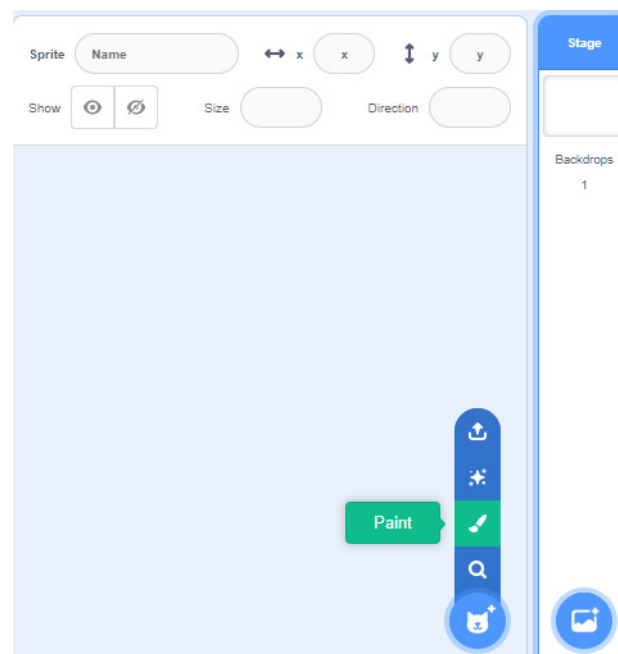
- (1) Tap on "Sensing" block category,
- (2) grab "if touching color then" block,
- (3) drop it under the "forever" block,
- (4) tap on the color within the "if touching color then" block to change the color,
- (5) tap on the eye-dropper icon to select a color, (6) move over to the stage area and pick the maze color to set the color on the "if touching color then" block.





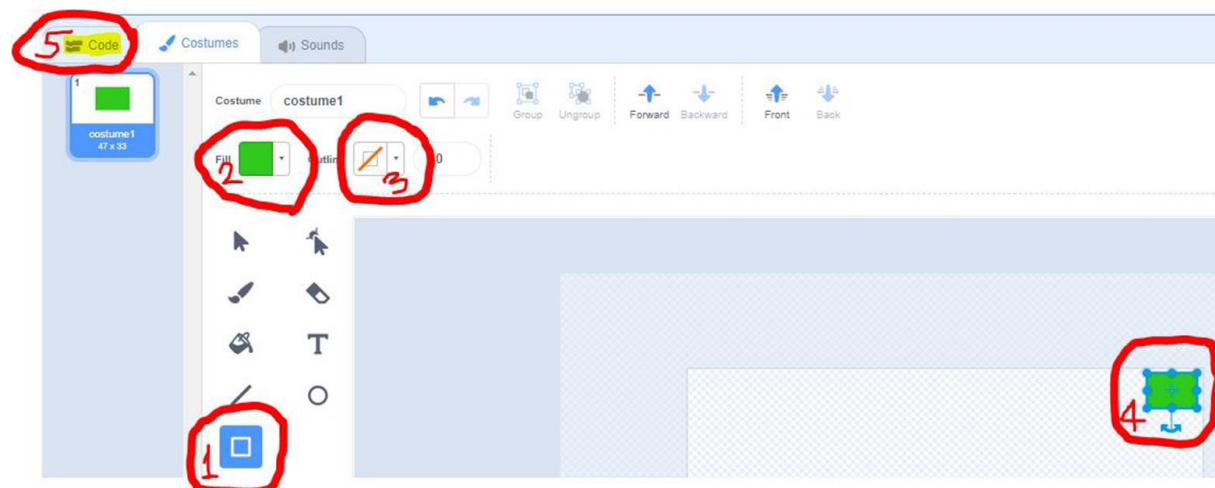
32

Move over to the “cat” icon on the bottom left corner of the Sprite panel to tap on the paintbrush icon to create another sprite.



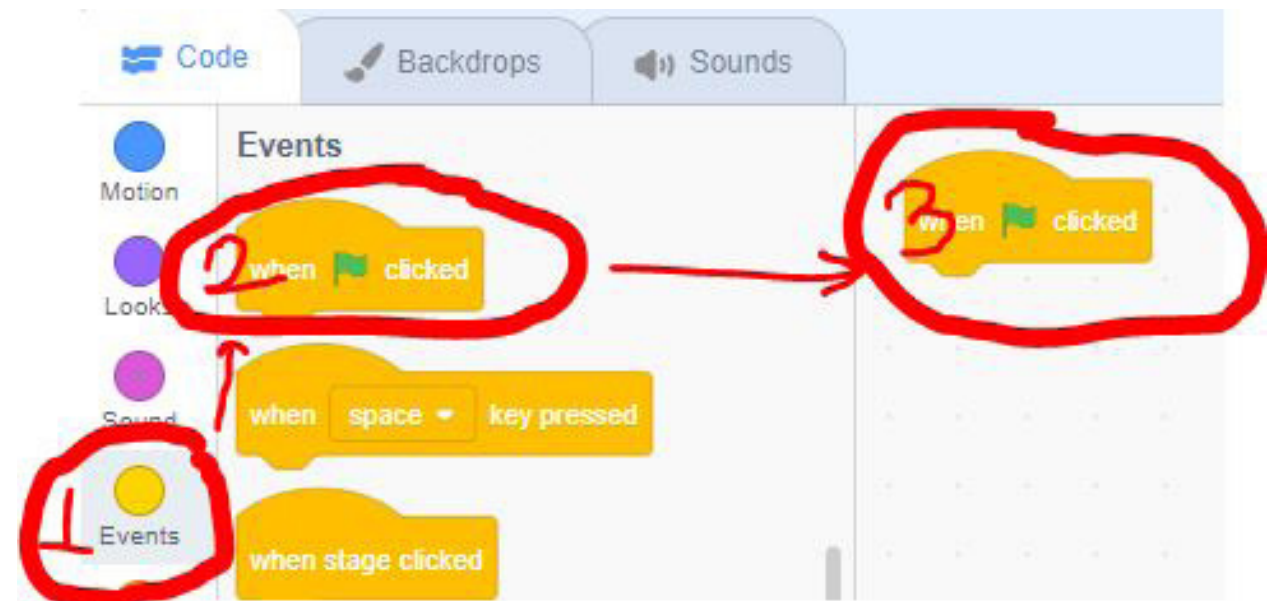
33

In the paint panel,  
 (1) choose the Rectangle tool,  
 (2) pick a fill color you like and record the color code for this color,  
 (3) choose an outline color or disable the outline,  
 (4) draw a rectangle shape to the top right corner of the screen as the target for the maze, and  
 (5) tap on the “Code” tab on the top-left corner to go back to the Scratch blocks



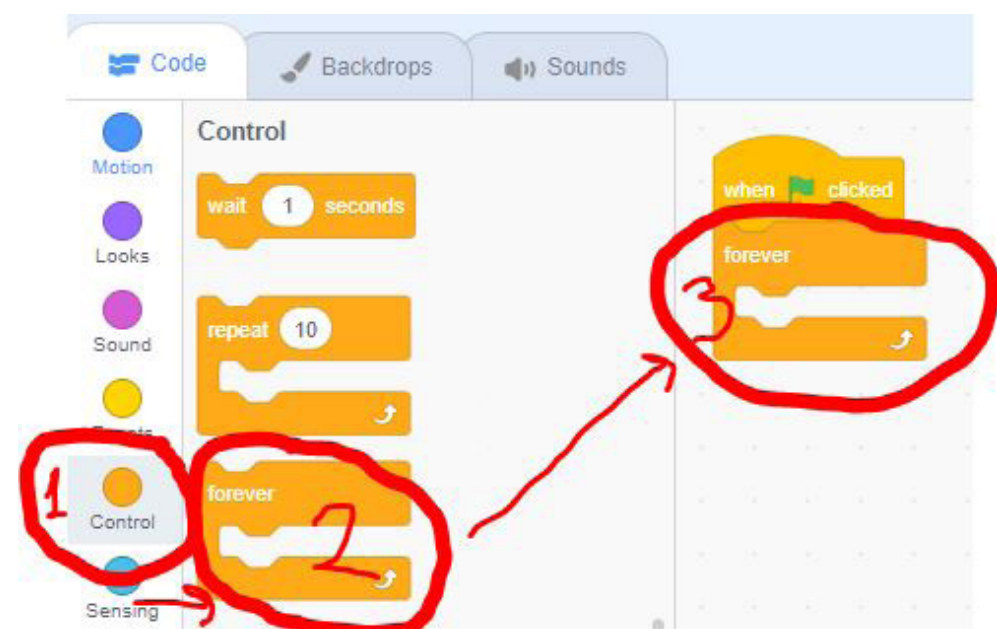
34

(1) Tap on “Events” block category,  
 (2) grab “when flag clicked” block and  
 (3) drop it into the scripting area.



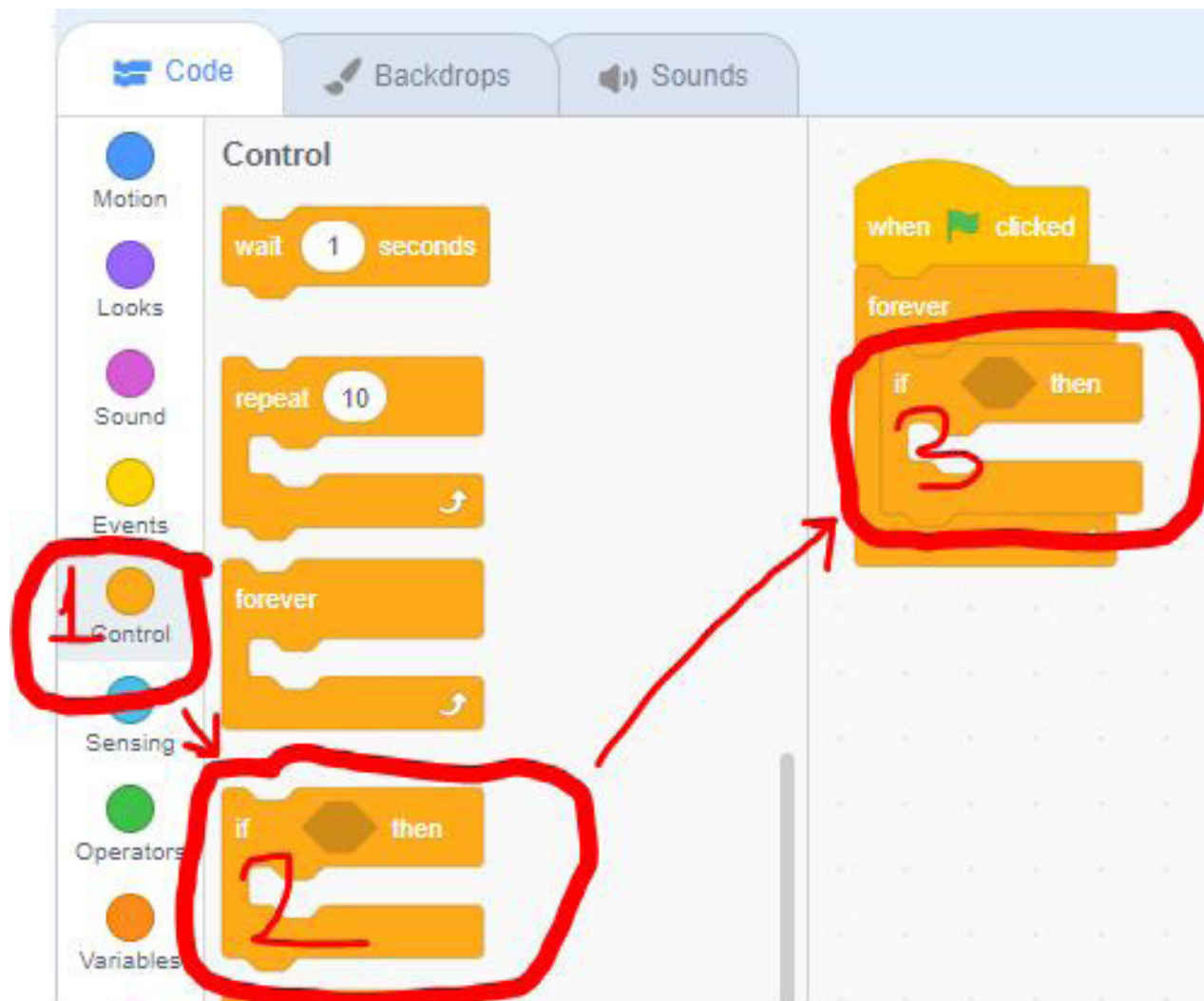
35

(1) Tap on “Control” block category,  
 (2) grab “forever” block and  
 (3) drop it under the “when flag clicked” block.



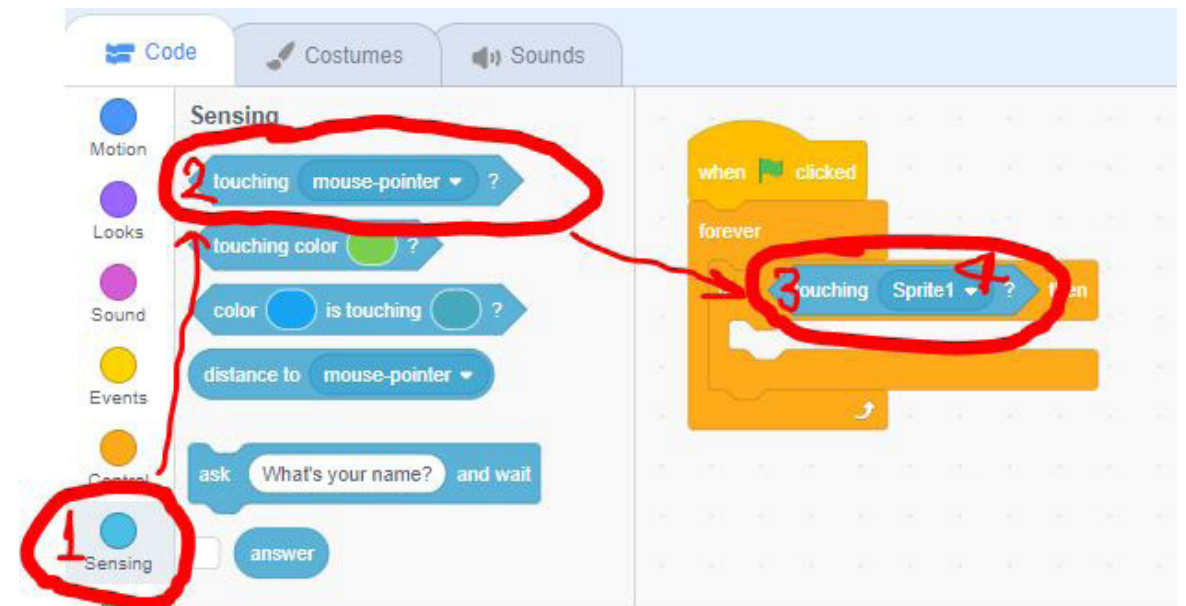
36

- (1) In the "Control" block category,
- (2) grab "if-then" block and
- (3) drop it within the "forever" block.



37

- (1) Tap on "Sensing" block category,
- (2) grab "touching mouse-pointer" block,
- (3) drop it within the "if then" block,
- (4) tap on the "mouse-pointer" drop-down menu and change it to "Sprite1", where you have the circular shape.



38

- (1) Tap on "Looks" block category,
- (2) grab "say Hello!" block,
- (3) drop it within the "if touching Sprite1 then" block,
- (4) change "Hello" to "You win!!!".

