

Working with Scratch

In this lesson you will learn to perform several key Scratch programming skills.

Please follow the instructions in sequence. When you are finished with each activity, check the box to indicate that you have successfully completed the activity.

Moving the cat sprite with your mouse.

1. Locate the mouse cursor on the cat sprite in the white stage.
2. Move the cat sprite to the right edge of the stage. What the x: and y: coordinates of the cat's position?

3. Move the cat to the left. What the x: and y: coordinates of the cat's position?

4. Move the cat to the top right corner of the stage. What the x: and y: coordinates of the cat's position?

5. Move the cat to the top left corner of the stage. What the x: and y: coordinates of the cat's position?

6. Move the cat to the bottom right corner of the stage. What the x: and y: coordinates of the cat's position?

7. Move the cat to the bottom left corner of the stage. What the x: and y: coordinates of the cat's position?

8. Move the cat to the x: 0 and y: 0 position in the stage. Where is the cat?

9. What is the x: position at the right edge of the stage?

10. What is the x: position at the left edge of the stage?

11. What is the y: position at the top edge of the stage?

12. What is the y: position at the bottom edge of the stage?

Activity complete.

Using Scratch instructions to move the mouse.

In this activity, you will use Scratch instructions to move the cat sprite.

1. Click on the Motion button to display the Motion instructions.



2. Drag in the two “move 10 steps” instructions from Motion into the Scripts window.



3. Click on this “move 10 steps” in the Scripts window.
4. Repeat clicking on the “move 10 steps” instruction several times. What happens?

5. Edit the value of the second “move 10 steps” instruction and change the value from 10 to -10. Click on this instruction several times. What happens?

6. Move the cat to the middle of the stage.
7. Change the value of the “move steps” instructions from 10 to 5. And click on each “move steps” instruction several times. Note what happens

8. Change the value of the “move steps” instructions from 5 to 50. Change the direction of the cat and click on the modified “move steps” instruction. What happens? _____

Activity complete.

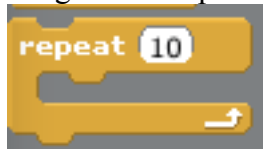
Creating a repeat script

In this activity you will create an activity the moves the cat back and forth across the screen 5 times.

1. Click on the Control button.



2. Drag in the “repeat 10” instruction into the Scripts area.



3. Drag the “move 10 steps” instruction into the “repeat 10 instruction”.



4. Click on this instruction block and observe what happens to the cat.

5. Drag the cat back to the middle of the white stage.
6. Drag in another “move 10 steps” instruction and insert in the repeat loop under the “move 5 steps” statement.
7. Click on the “repeat” statement and observe the results.

8. Drag in a “wait 1 secs” statement from Control and insert it in the repeat loop between the 2 “move” instructions.
9. Drag in another “wait” instruction and insert it under the second “move” instruction.



10. Click on you “repeat 10” instruction block and observe the behavior of the cat sprite.

11. Change the value in the “wait 1 secs” instruction to 0.2. Click on the “repeat 10” instruction and observe the cat’s behavior.

12. Change the number of steps that the cat takes in both directions and observe the cat's behavior.
13. How could you create this set of actions without using the repeat loop?

Activity complete.

Create a forever script

In this activity you will create a script that executes your instructions until you tell it to stop.

1. Right click on your repeat loop instructions and choose "duplicate" to create a second version of these instructions.
2. In the second set of instructions, remove the "move" and "wait" instructions as a block from the "repeat" instruction.
3. Delete the empty "repeat" instruction.
4. Drag in a "forever" instruction and enclose the "move" and "wait" statements in this "forever" loop instruction.



5. Click on the "forever" instruction and observe the cat's behavior.
6. To stop the script, click on the red stop sign.



7. Modify the values of the "move steps", turn clockwise degrees, and "wait secs" instruction. Observe the results of the changes.

What is the difference in behavior between the "repeat 10" loop and the "forever" loop?

Activity complete.

Bouncing the sprite

In this activity, the cat sprite will move around the stage and if it hits the edge of the stage it will turn and move in a new direction.

1. Drag in a "forever" instruction.
2. Insert a "move 10 steps" instruction in the forever loop. Change 10 to 30.
3. In the "forever loop, add an "if" statement under the "move 30 steps" statement.
4. In the "if" statement drag in a "touching" instruction.
5. In the "touching" statement, use the pulldown to select "edge".

6. Inside the “if” statement add a “turn 15 degrees” from Motion. Modify this instruction to be 30 degrees.
7. Under the “turn” instruction add a “move 10 steps” statement. Change 10 to 30.
8. Click on the forever instruction and observe the cat’s motions.

Activity complete.

Making a dance

Now you will make the cat dance.

1. Drag in two “move 10 steps” instructions from Motion.
 2. Drag in two “play drum for beats”
 3. Insert a “playdrum” instruction under each “move” instruction.
 4. Change the value of the second “move” instruction from 10 to -10.
 5. Click on the instruction set and observe the action.
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6. Insert this instruction set in a “repeat 10” loop and observe what happens.
 7. Add “when green flag clicked” instruction to the top of this instruction block.
 8. Observe what happens. _____
 9. Change the drum sound for one of the “play drum” instructions by using the left pulldown of this instruction.
 10. Change the beat duration of one of the instructions by modifying the “beats” value in one of the “play drum” instructions.
 11. Add 2 more pairs of “move” and “play drum” instructions to this repeat loop and change the number of steps moved, the drum sound, and duration of the beat. Observe what happens. _____
 12. Change this loop from a repeat to a forever loop. How is the behavior of the code changed the behavior of the sprite? _____

Activity complete.