How to be a Mentor to Bring More Girls to STEAM?

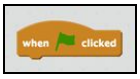
Menka Gupta @menkag
Nilay Yener @nlycskn
Pavi Bhatter @pavibhatter

Fun with Scratch

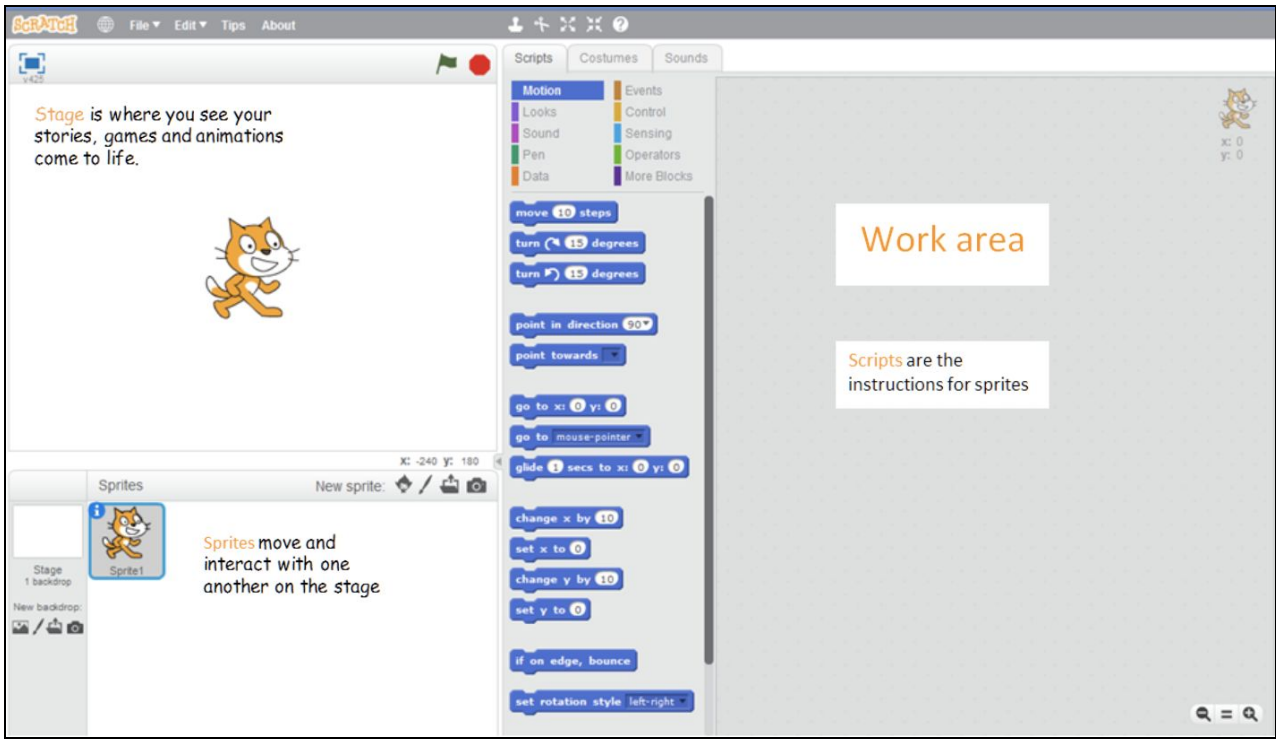
What is Scratch?

- Created at MIT Media Lab https://scratch.mit.edu/
- Visual programming language, using drag-and-drop block interface
- Used to create interactive stories, games, music, art, and animations
- Learn to think creatively, reason systematically, and work collaboratively
- Designed for 8 to 16 year olds
- Information for Educators: https://scratch.mit.edu/educators/
- Information for Parents: https://scratch.mit.edu/parents/

Stage: where you see your stories, games, music, art, and animations come to life (e.g. you are "running" the code and seeing the output"
Sprites: characters that move and interact with one another on the stage
Work Area: where you are actually "programming" and placing the logic behind your project

To run scripts (your program), click the green flag, given you have 

in your work area. The red stop signs stops all scripts (break).



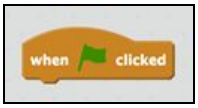
Now that you have the basics, let's make our first Scratch program!

Objective:

1. Move the kitty 50 steps forward, then move 50 steps backward
2. Repeat it 10 time
3. Make it move forever

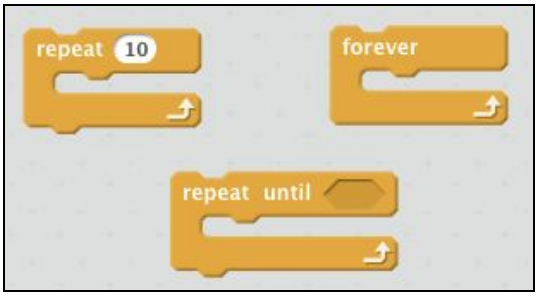
Hints:

- The kitty is the Sprite
- Don't forget to add this button to the top of your



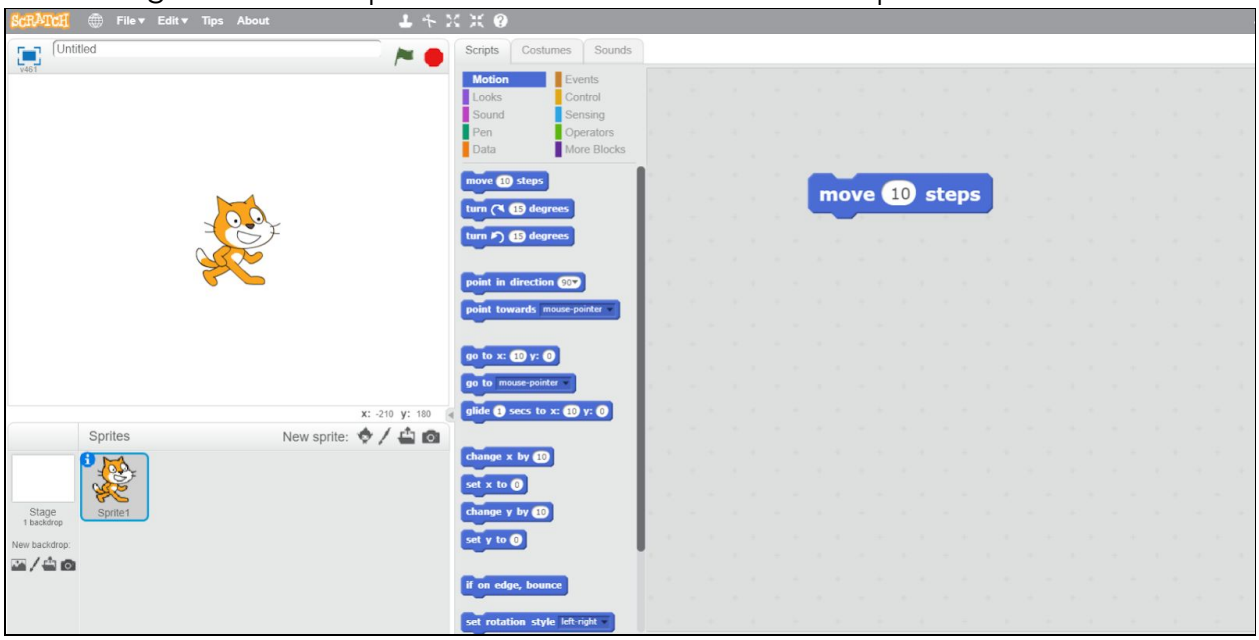
program

- Use a combination of "wait", "move", "repeat", and "forever" functions
- "repeat" and "forever" wrap around all the blocks in your program

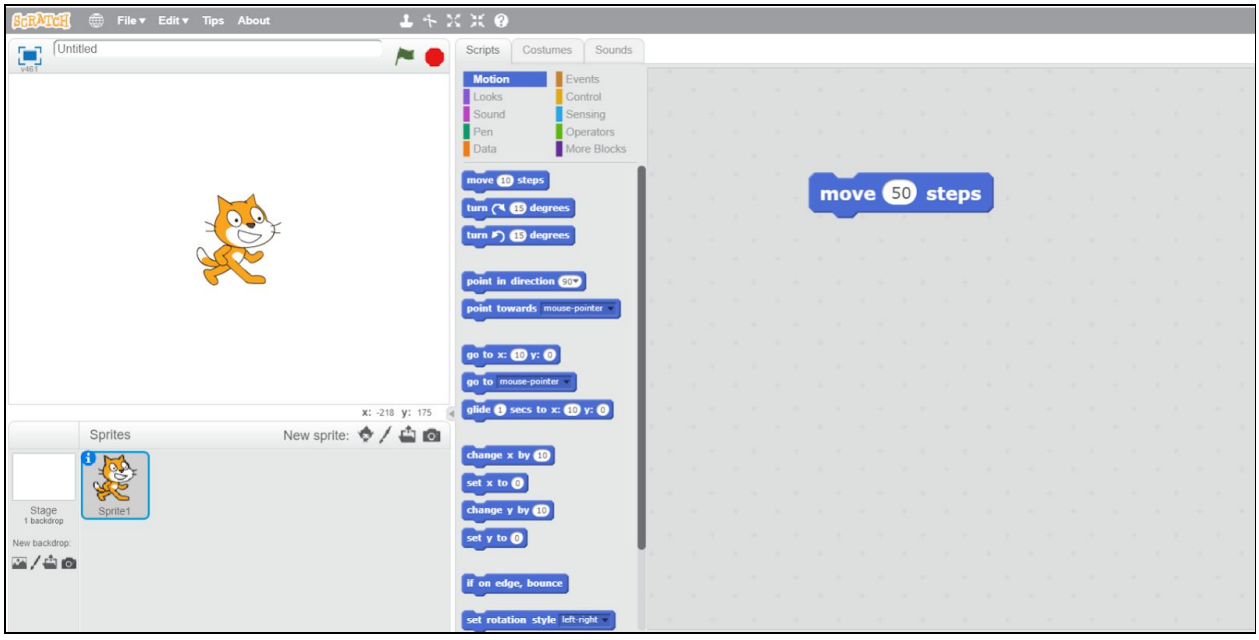


Solutions:

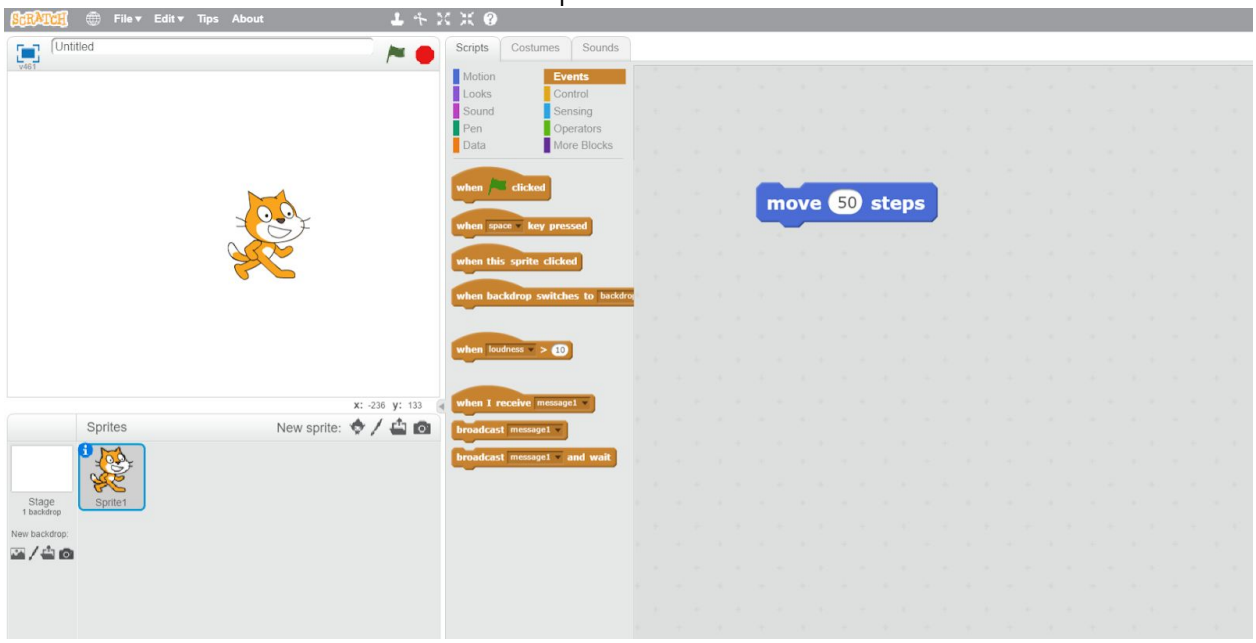
1. Drag “Move 10 steps” block from “Motion” under Scripts to the Work Area.



2. Click on 10 and change it to 50. This is how your screen should look now.

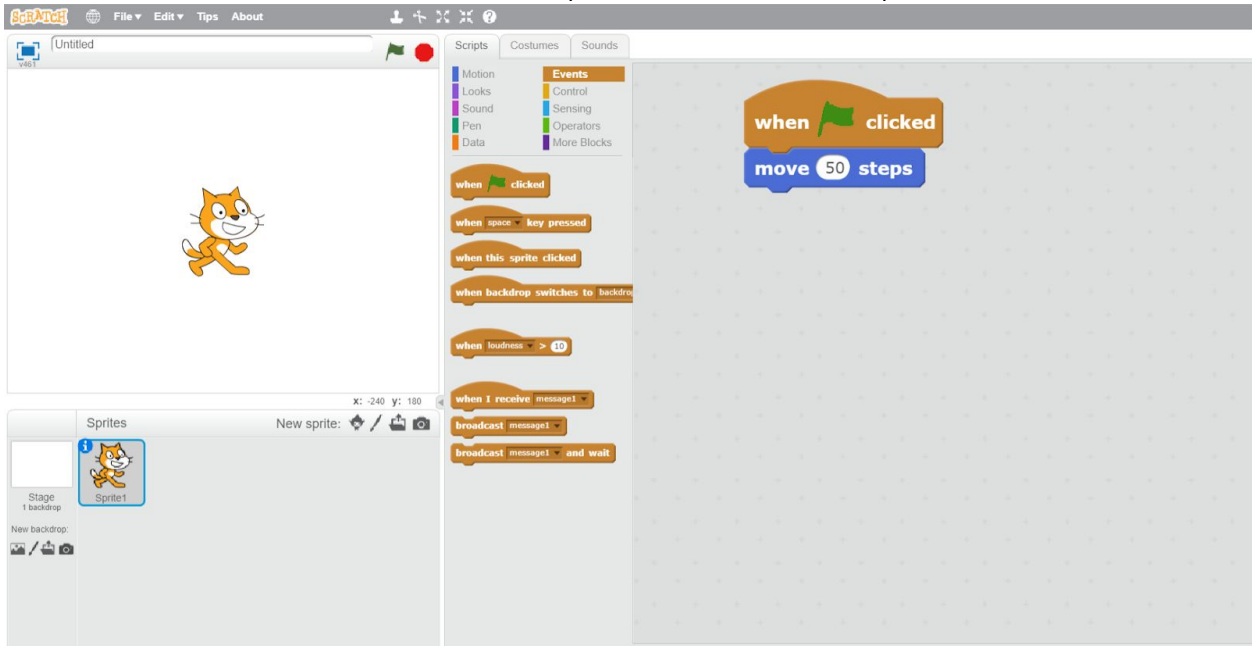


3. Click on "Events" section under Scripts.



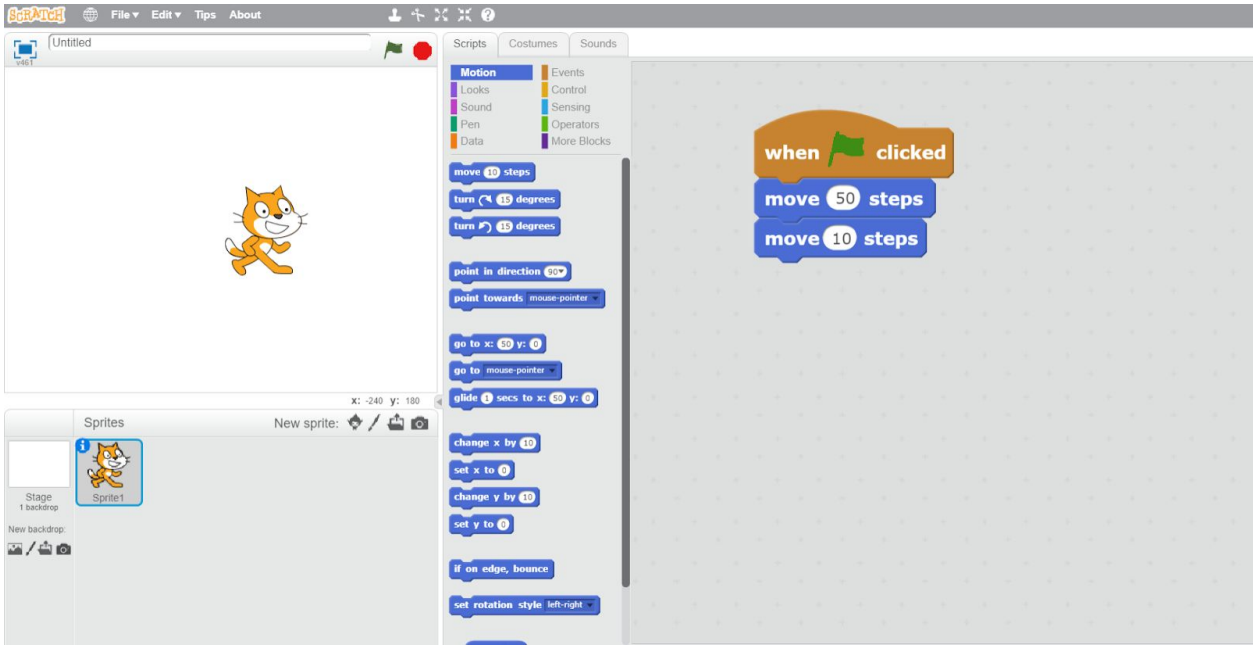
4. Drag 

and attach on top of the "Move 50 steps" block.

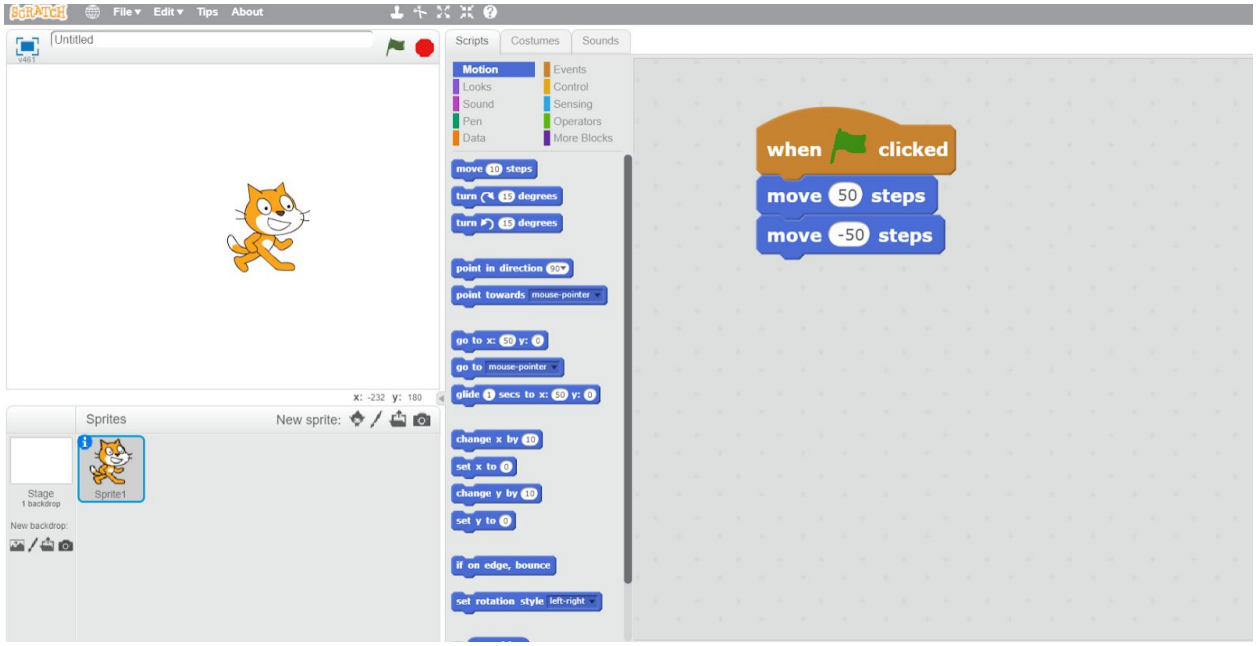


5. Click on Green Flag on top of Stage area to run the program. You will see the Kitty move 50 steps.

6. To move Kitty backwards - Go to “Motion” section under Scripts, drag another “move 10 steps” and attach the first move block. This is how your program will look now.

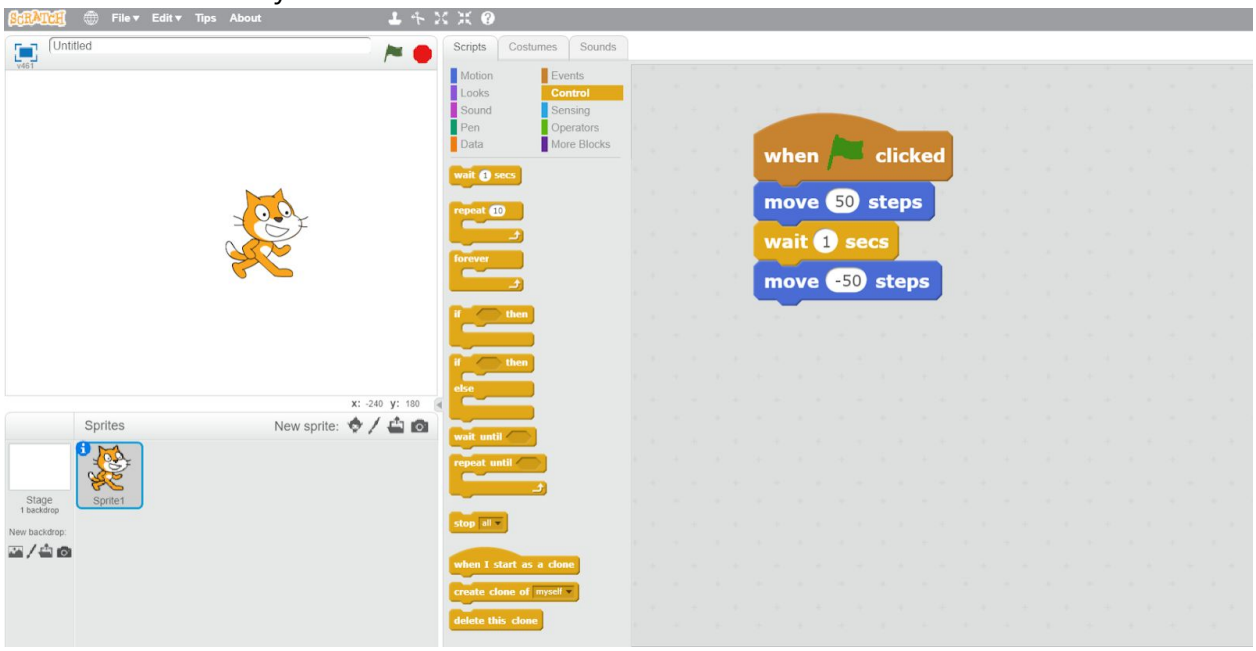


7. Click on 10 and change it to -50. This is how your screen should look now.

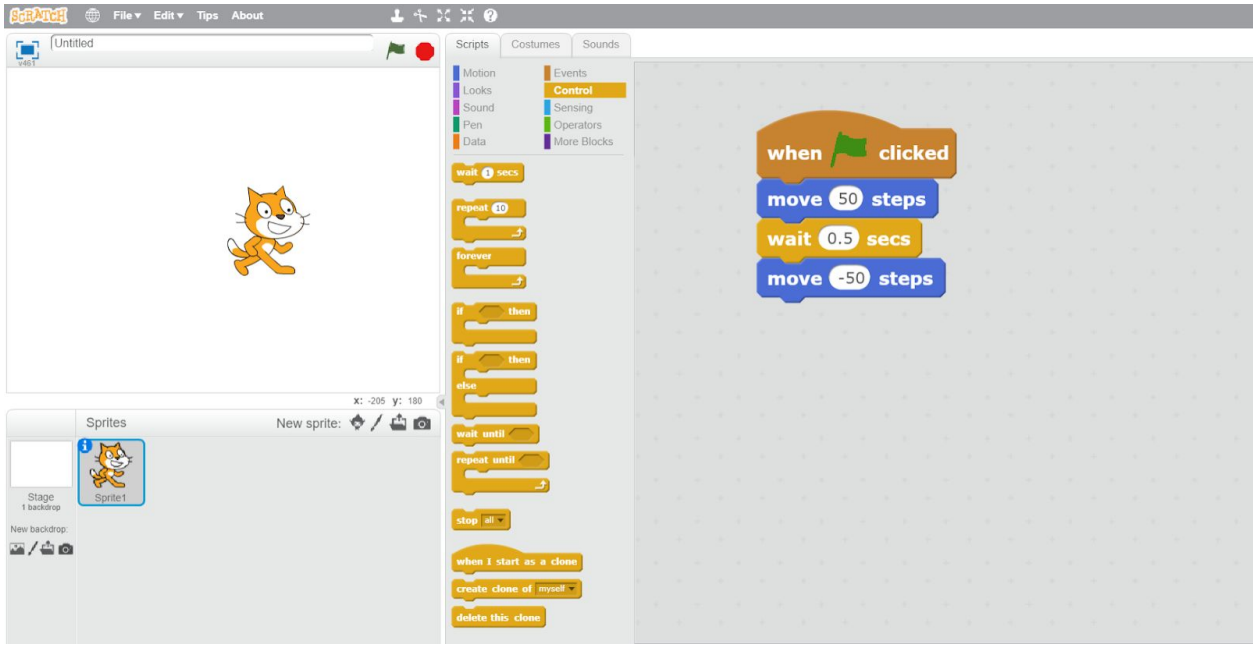


8. Can you see the forward and backward movements? It happens very fast. Let's add a wait between the two moves to make the movements visible.

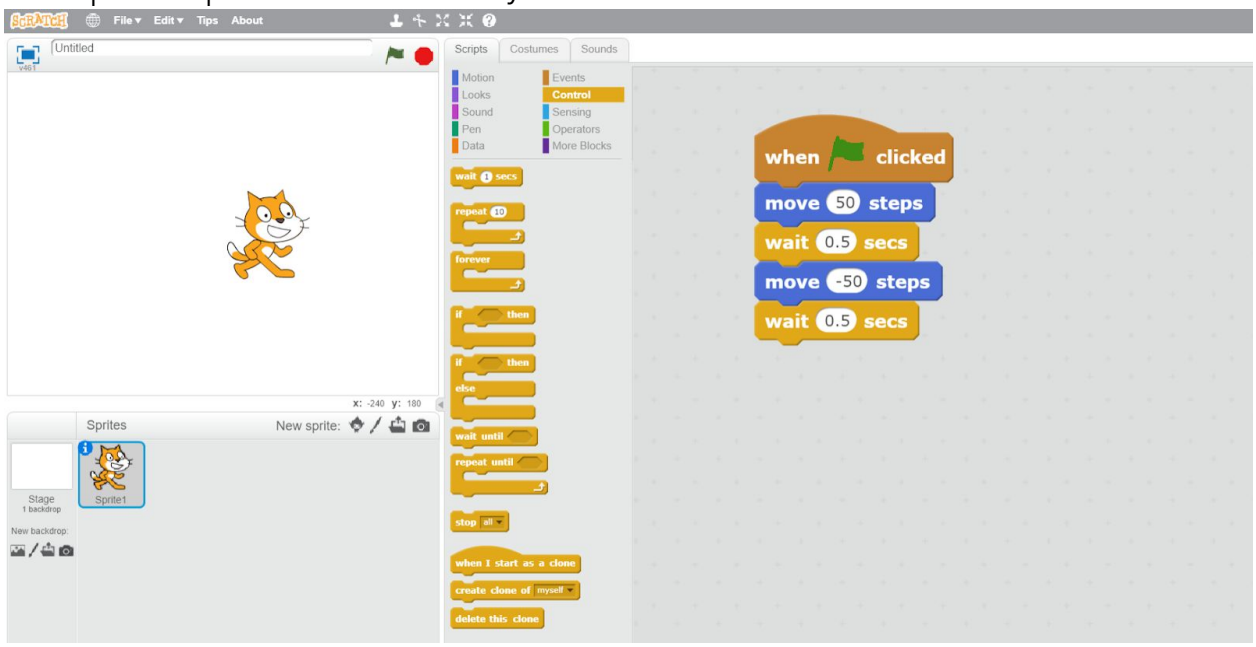
Go to "Control" section under Scripts and drag "Wait 1 secs" between the two move blocks. This is how your screen will look like now.



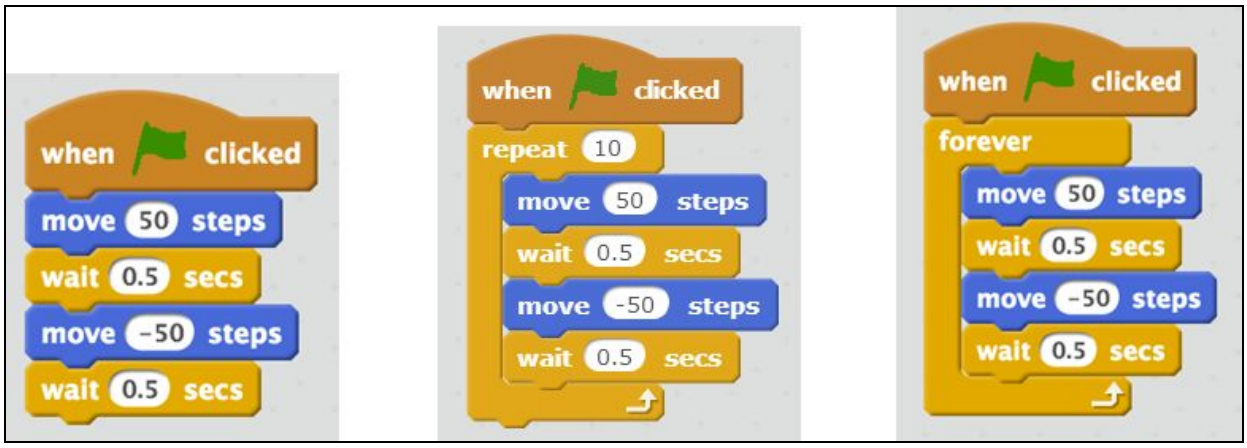
9. Click on 1 and change it to 0.5.



10. Repeat steps 8 & 9. This is how your screen will look like now.



11. To make the program repeat 10 times, you can add repeat block from "Controls" section.
12. To make the program forever, you can add forever block from "Controls" section.



This runs the program once. This runs the program 10 times. This moves the kitty forever.

Devoxx4Kids Workshops and Materials

Here you can find Devoxx4kids workshop and materials.

- All workshops and resources
  http://www.devoxx4kids.org/materials/workshops/
  https://github.com/devoxx4kids/materials

- Scratch:
  http://www.devoxx4kids.org/materials/workshops/scratch/
  https://github.com/devoxx4kids/materials/blob/master/workshops/scratch/en/Introduction-to-Scratch-english.pdf
- Lego Mindstorms:
  http://www.devoxx4kids.org/materials/workshops/lego-mindstorms/
- Circuit Arts:
  bit.ly/SQUISHY
  How to make conductive material for squishy circuits:
  https://www.youtube.com/watch?v=Ud05YJMzm00
- Devoxx4Kids Presentations:
  http://www.devoxx4kids.org/materials/presentations/

Reach out to us:

devoxx4kids.org
usa.devoxx4kids.org
@devoxx4kids
@devoxx4kidsUSA
#Devoxx4KidsGHC18