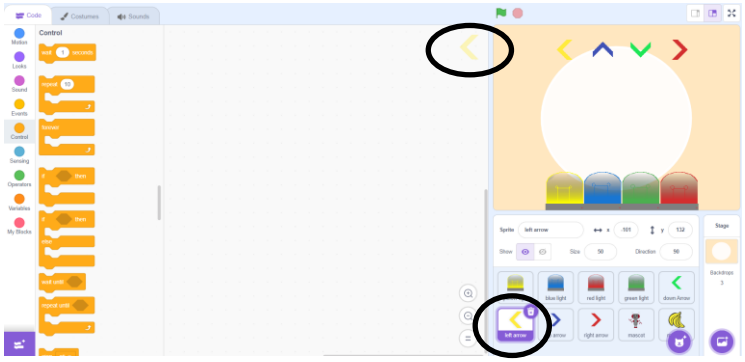
LightUp Workshop Part 2 – Falling Arrows

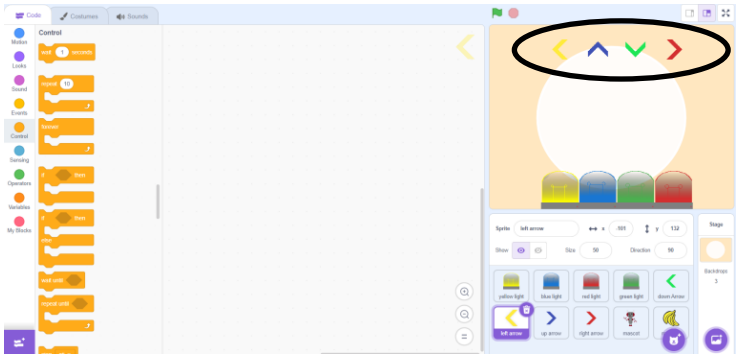
Below are the detailed instructions intended to help guide you through the LightUp Workshop. A word that will be used often is the word Sprite. This is what Scratch calls an object or an image. They can be anything such as animals, shapes, or characters, but today we will be using lightbulbs and arrows.

Guided Steps:

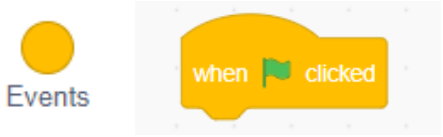
1. Before starting the second part of the workshop, make sure that you have completed the first part of the workshop.
2. To start, make sure that your left arrow sprite is selected.



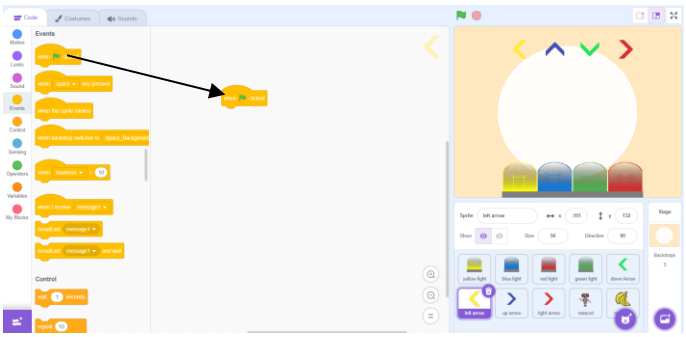
3. For this part of the workshop, we are going to add code for the arrows at the top right of our screen. We are doing this to give the illusion that our arrows are falling across the screen.



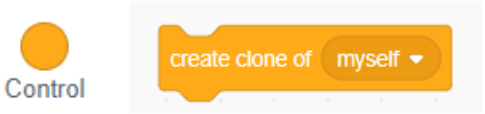
4. To start we need to grab a beginning block to let Scratch know when we want our code to run. So go to the “Events” tab on the far left and find the “When ____ clicked” block.



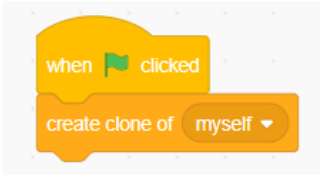
5. Drag the “When ____ clicked” block to your work area in the middle of your screen.



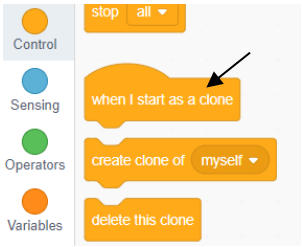
6. Next, we need to add some code under our Event block, so go to the “Control” category and find the “Create clone of _____” block.



7. Drag that block to your work area in the middle of your screen and place it under the “When ____ clicked” block.

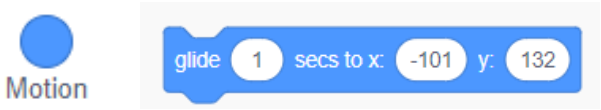


8. We now need to add the second part of our code, so we will need to move another “Control” block in our work area. So, above our “Create clone of _____” block, there should be a “When I start as a clone” block above it.

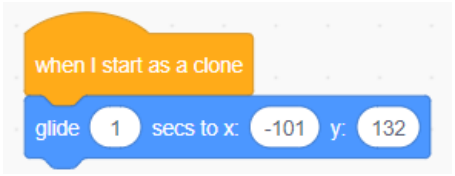


9. Drag that block to work area and place next to your two blocks.

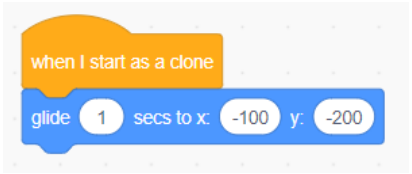
10. What we did was create a duplicate or clone of our sprite when the user clicks the green flag. Next, we are going to tell Scratch that when we create a clone of our arrow, we want to give the clone an action.
11. So, click the “Motion” category and find the “Glide __ secs to x: ___ y: ___” block.



12. Drag that block to your work area in the middle of your screen and place it under the “When I start as a clone” block.

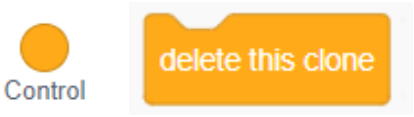


13. To make sure our clone glides the way we want it to, change the x coordinate to be -100 and the y coordinate to be -200.

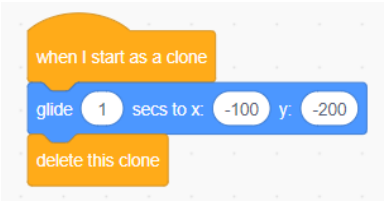


14. Now click the green flag to see how your Scratch program works! If it works correctly a yellow arrow should fall and stop at the bottom of your yellow light.

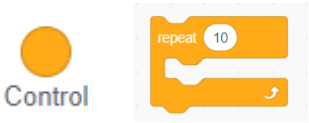
15. While we do want the arrow to stop at the bottom when we have a lot of arrows falling on our screen it will be a bit much so let's delete the clone after our code is done running.
16. Go back to the "Control" category and find the "Delete this clone" block.



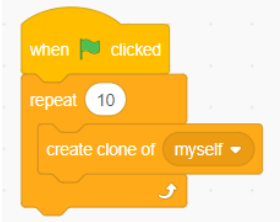
17. Drag that block to your work area in the middle of your screen and place it under the "Glide __ secs to x: ___ y: ___" block.



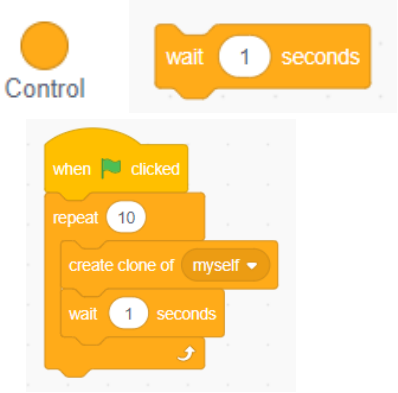
18. Run the code again and you will see that instead of your arrow stopping at the bottom it disappears after the second is up.
19. To get the arrows to keep falling we need to use a loop. A loop repeats a set of code blocks over and over until our condition is over.
20. Scroll to the top of the "Control" category and find the "Repeat ___" block. The entire block will our loop and the number is our condition which tells our program how many times we want to repeat our code.



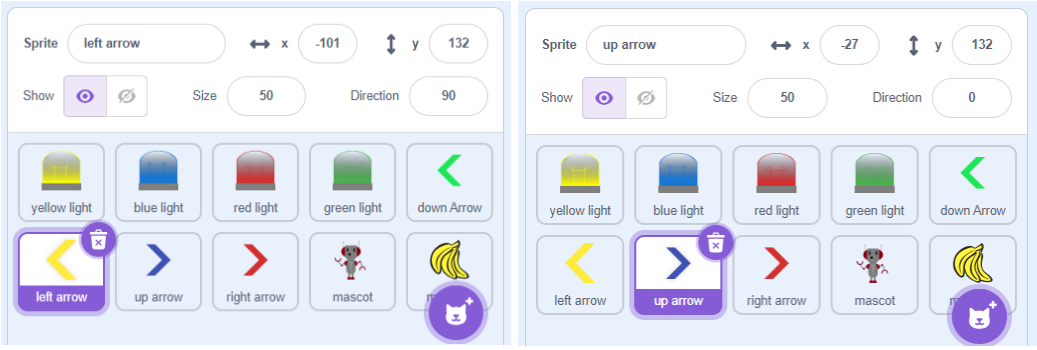
21. Next place this code under the "When ____ clicked" block and Scratch should put your "Create clone of _____" block in the "Repeat ___" block, but if it doesn't drag the block inside.



22. Now if we run our code, you will see that all the arrows kind of fall together and at the same time. So, we need to have our code wait before we create the next arrow.
23. In the "Control" category drag the "Wait ___ seconds" block under the "Create clone of _____" block. Then run your code again.



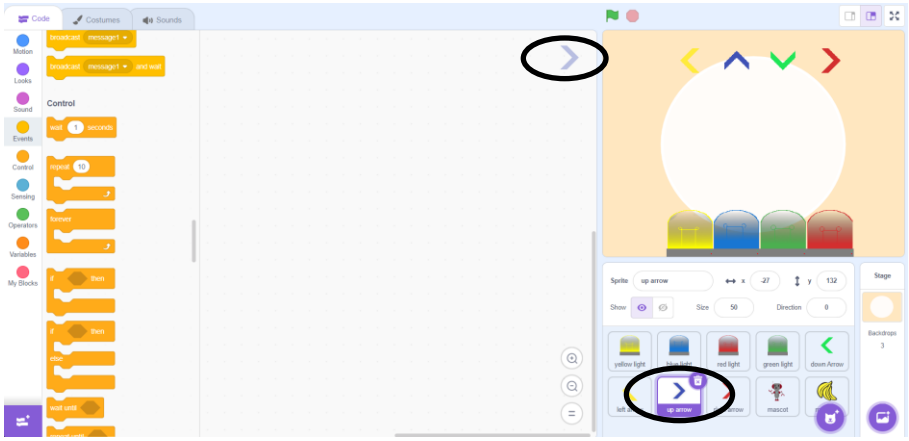
24. The yellow arrows now "fall" one by one. If you feel like it's still a little too fast, then you can adjust the seconds to your liking.
25. Now you need to do the same thing for the rest of the arrows.
26. To switch to another arrow, you need to select a new one at the bottom of your screen. So, if I want to create code for the blue arrow I would have to click that sprite.



27. Notice that once you click a new sprite you will get a blank workspace. The workspace is blank because you haven't created any code for it yet.

Don’t worry about saving any of your code, if you go click back to the yellow arrow, you will notice that all your code is still there.

28. Remember to make sure that you are on the correct sprite by checking that the object is highlighted at the bottom of your screen and the faded image is at the top.



29. Now it’s your turn to try! Use steps 2-23 to have all the arrows fall down the screen.

30. Use these coordinates for the rest of the arrows:

Happy Coding!