Workshop 1: Let's Move!

Grades: 3-9
Time Estimate: 60 minutes

Learning objectives:

- Familiarity with Scratch
- Familiarity with basic programming concepts of sequencing and loops

Material:
- Computer
- Scratch account
- Overhead projector

Warm-up [10 min]

Start with a quick, fun unplugged activity that reinforces the importance of precise directions (e.g. one student takes on role of blindfolded "robot" in front of the class, while the other students give directions to complete task or arrive at a destination).

Introduction to Scratch Basic Environment [10 min]

- Introduce the following basic elements of the Scratch screen
    - *Changing the Language* (if required)
    - *Different sections of the screen*
        - **Stage**: where the action happens
        - **Sprite**: the characters that are part of the program
        - **Script**: where the code is written

Demonstrate how to move a sprite using these blocks
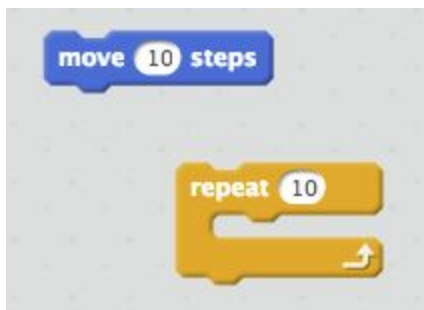
What happens if the sprite gets stuck on the side of the stage? In this case it's helpful to start a "reset" sequence, a series of commands that will return the sprite to starting position.
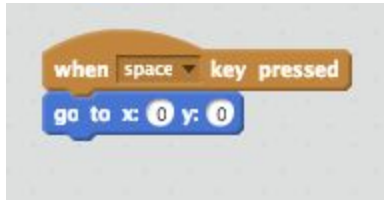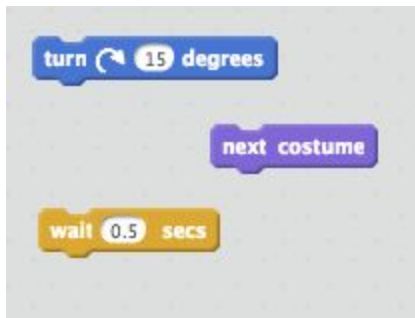

Simple Challenge [15 min]

- Construct, play and experiment with a simple animation loop.
- Add useful blocks to our reset sequence

Choose a background and construct a loop with a **forever** block that will send a sprite running back and forth across the stage, using this the **if on edge** block
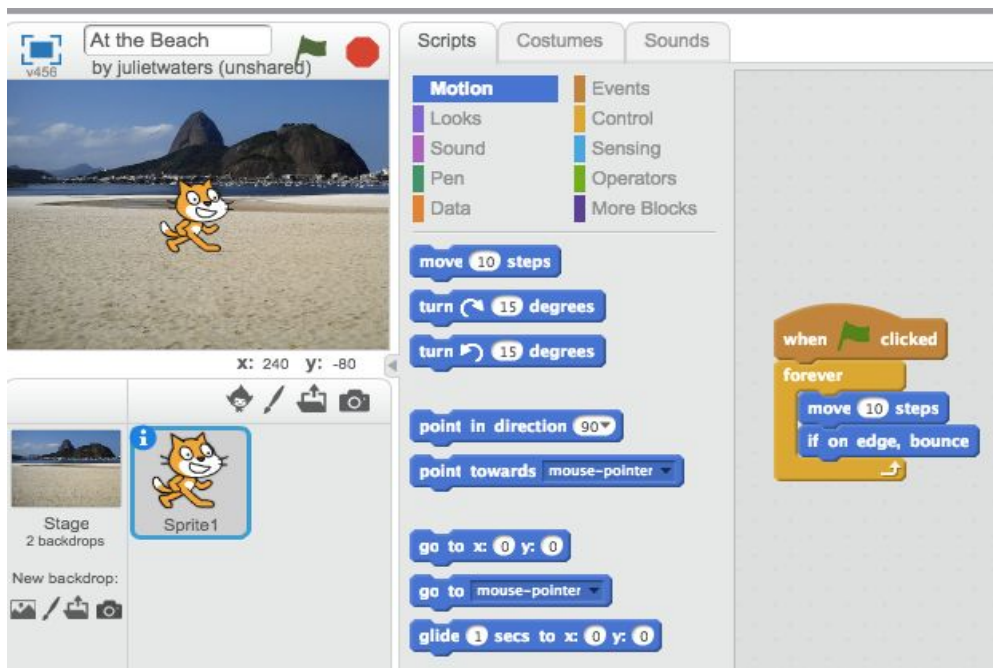
Here are some blocks we might add to our sequence. What happens when students add them. Do some work better inside the block or outside?

Here are some blocks that might prove useful for our reset button. What happens if students change the parameters, e.g change point in direction 90 to 45 or 180?

Stretch Challenge   [15 min]

Program a second sprite, perhaps one that flies above the first one.

Hint: Whenever a sprite is dragged with the mouse pointer to a place on the stage, the position (x,y) blocks automatically adjust to that position. Once the adjusted position block is dragged into the script area the position is set, and the Sprite is "initialized."

Wrap Up [10 min]

Students share their discoveries, strategies, difficulties encountered and successes.

Practice:

Build an aquarium with multiple sprites, explore other kinds of animation loops in Scratch tutorials like "Animate Your Name," or try out a Code Club project like "Lost in Space." https://codeclubprojects.org/en-GB/scratch/lost-in-space/