
Lesson 4: Games (Part 1)

— BrainCo STEM Kit —

Objectives

By the end of the lesson, students will be able to:

- Understand concepts such as sequence, loops, conditionals, variables, and functions
- Code on mBlock software to create an interactive game

Final Project Challenge

Create a game on the mBlock software that uses all of the previous concepts.

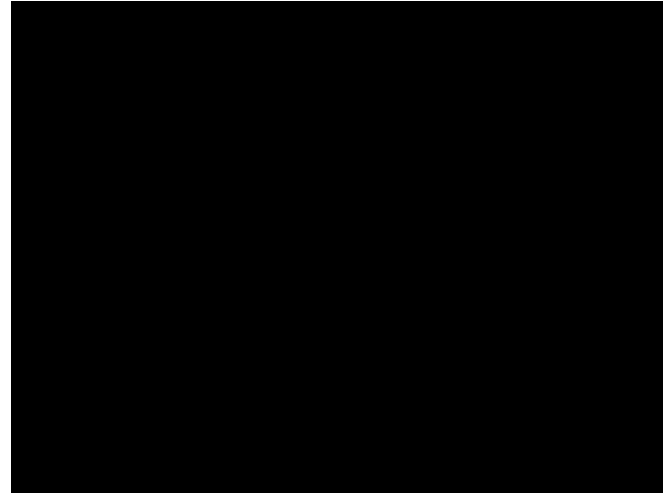
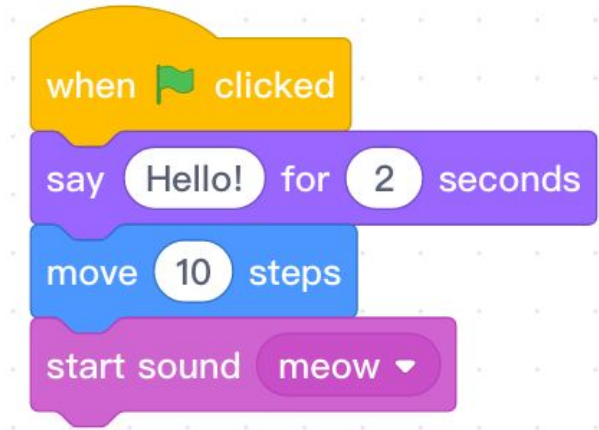
- Sequence
- Loops
- Conditionals
- Variables
- Functions

*In this lesson, you will be creating the **software** portion of the game. In the next lesson, you will incorporate the **hardware** portion (robotic hand)!

Sequence

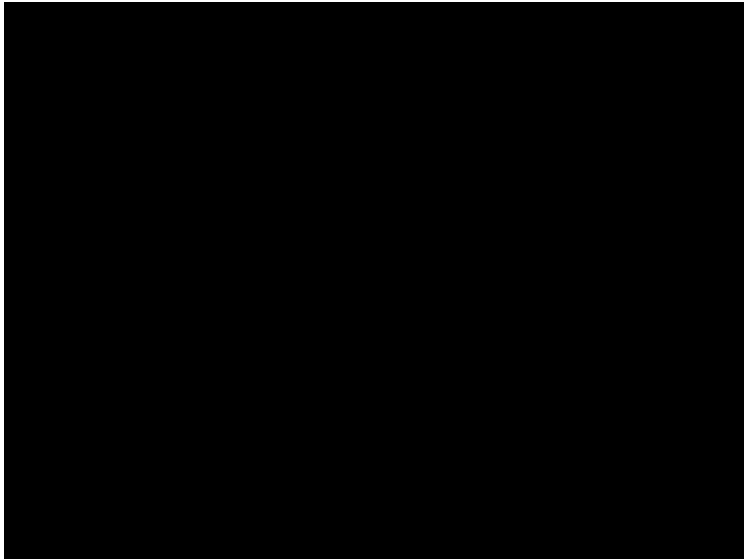
Definition: A set of **ordered steps** for completing a task

Question: What is the algorithm trying to complete?



Loops

Definition: A sequence of instructions that is **continually repeated** until a certain condition is reached



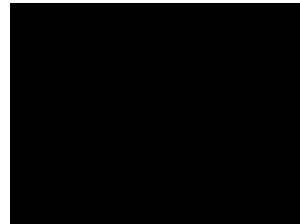
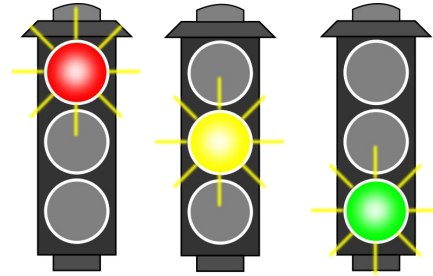
Conditionals

A sequence of instructions performed **if or when** a condition/requirement is met

If the light is red, **then** the car should _____.

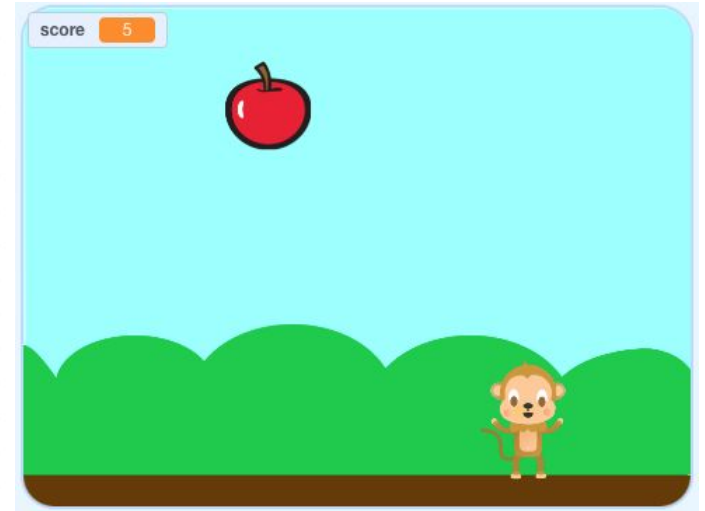
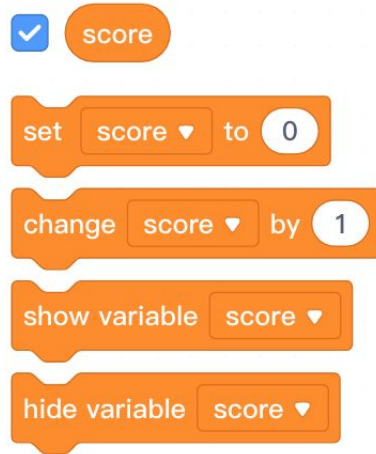
If the light is yellow **then** the car should _____.

If the light is green, **then** the car should _____.



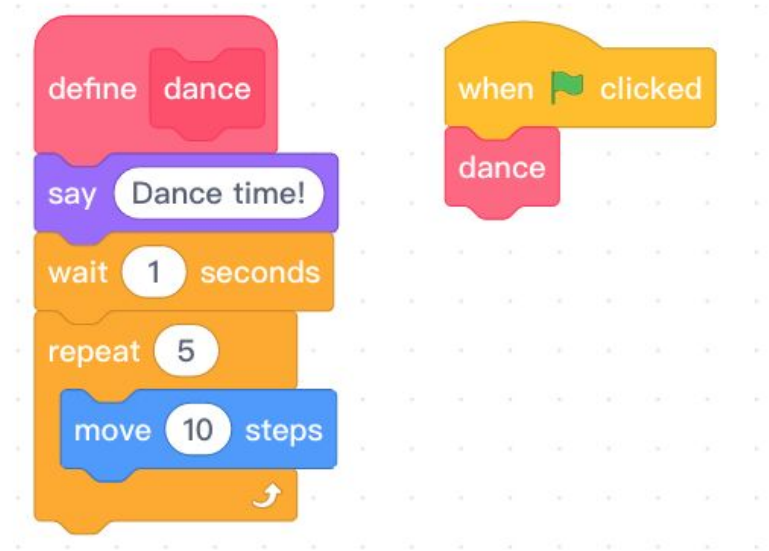
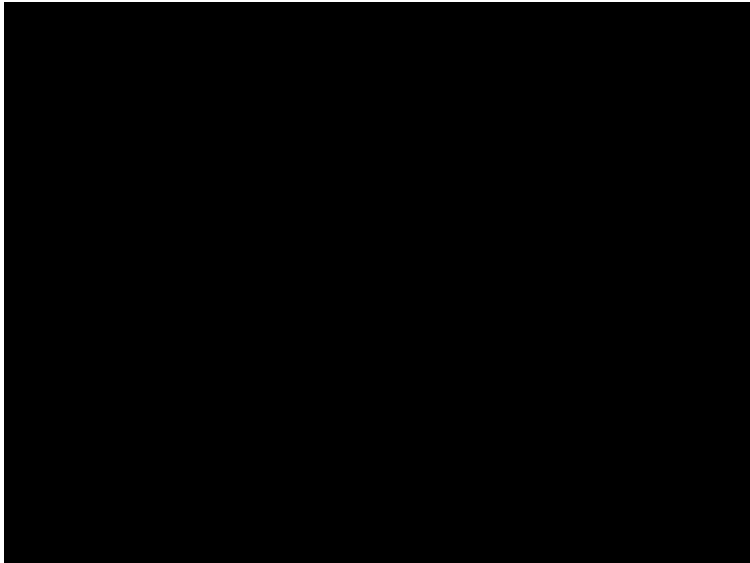
Variables

A container storing information that can be changed



Functions

A set of instructions that can be used to perform a specific task, or routine



Brainstorm



Brainstorm ideas for your game on the worksheet.

Remember: The game will have to include the **hardware** (robotic hand)

Examples:

- Create a game where sprites are passing the ball back and forth
- Create a game where the color of an object changes based on sprite's actions
- Create a game where different sounds are made based on sprite's decisions

Feedback

- 1) Partner up with another group
- 2) Share your brainstorm ideas
- 3) Receive feedback
- 4) Revise your game ideas

Question stems:

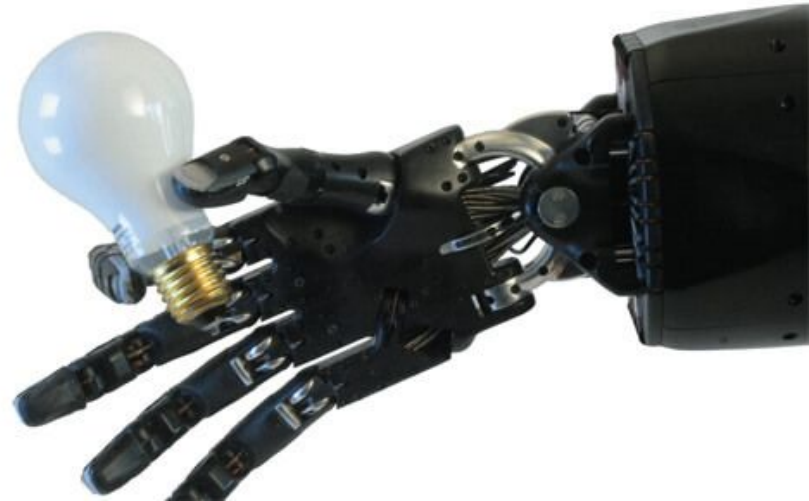
- Why did you choose _____?
- How does this show _____ concept?



Work-time

Expectations:

- Stay on task
- Be hard on content, soft on people
- Raise your hand if you need help



Exit Ticket

Set **goals** for your next work session

Complete **exit ticket**

