

# Note to the Instructor

- This is the second lesson of the three-lesson workshop. The lessons are designed to incorporate time for the participants to experiment with the software on their own. This second lesson will move onto some more advanced concepts use in Scratch. There are 2 project that will be created: an art project and a chase game.



Intro to

**SCRATCH**

Lesson 2  
Sensing & Events

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# Class Objectives

- Have Fun!
- Use debug tool
- Add randomness to the project
  - Add random sprite
  - Use random operators
  - Use conditional statement
- To understand
  - Sequence and iteration
  - Event

# Key Terms

- **Random Operator**– a block used to create chance
- **Sensing** – allows a Sprite to interact based on touch
- **Coordinate System** – the ‘X’ and ‘Y’ value of a specific location on the stage
- **\*\*\*Hint – if you don’t know what a block does > Right click it and select “help”**

# Chase Game - Background

- Click **stage** > **Backgrounds tab** > **import**
- Choose **underwater** from **nature folder**
- Click **Sounds tab** > **import**
- Choose **Pop** from **Effects folder**



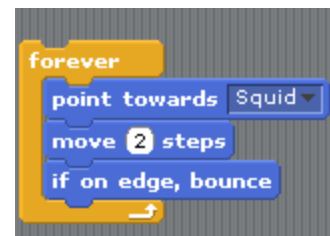
# Chase Game - Movement

- Choose two sprites (Dragon1-a and Octopus1-a)
- Octopus - Use **random operator** and **glide 1 sec to x, y blocks** to move one sprite randomly
- Dragon - Use **point towards Octopus** and **move 2 steps** to move the other sprite toward the first one



```
forever
  pick random -150 to 150
  pick random -230 to 230
  glide 1 secs to x: 212 y: 187
```

The image shows a Scratch script for the Octopus sprite. It starts with a 'forever' loop block. Inside the loop, there are three blocks: 'pick random -150 to 150', 'pick random -230 to 230', and 'glide 1 secs to x: 212 y: 187'. The 'glide' block is blue, while the others are green.



```
forever
  point towards Squid
  move 2 steps
  if on edge, bounce
```

The image shows a Scratch script for the Dragon sprite. It starts with a 'forever' loop block. Inside the loop, there are three blocks: 'point towards Squid', 'move 2 steps', and 'if on edge, bounce'. The 'point towards' and 'if on edge, bounce' blocks are blue, while the 'move' block is light blue.

# Chase Game - Control

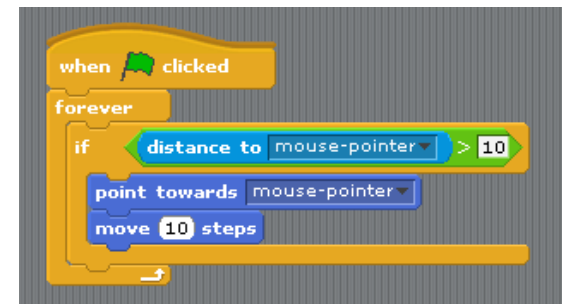
- Use **point towards mouse-pointer** and **move 10 steps** to control octopus with mouse
- **if statement**, **greater than operator**, and **distance to mouse-pointer** to optimize the movement



```
when clicked clicked
forever
  point towards mouse-pointer
  move 10 steps
```



```
if distance to mouse-pointer > 10
```



```
when clicked clicked
forever
  if distance to mouse-pointer > 10
    point towards mouse-pointer
    move 10 steps
```

# Chase Game – Event 1

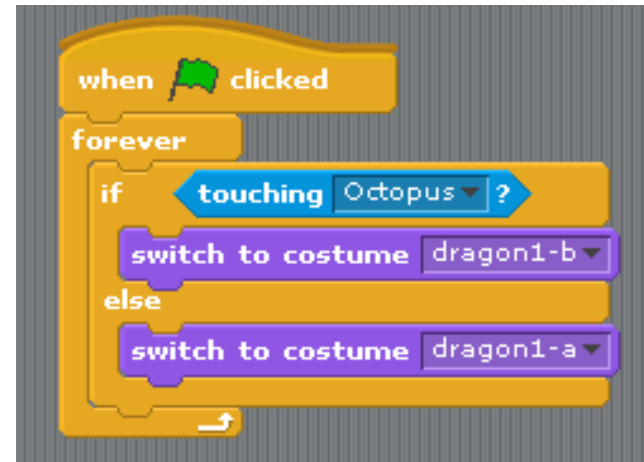
- Event of octopus
- Use **touching Dragon blocks** and **if statements** to trigger events
- Use **say You got me! For 1.5 secs block** to create the event







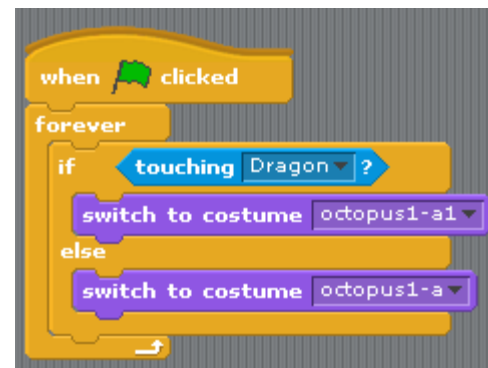
# Chase Game – Event2

- Add event to Dragon
  - Click **Costumes tab** > **import**
  - Choose **dragon1-b** from **fantasy folder**
  - Add the script to the **Dragon** sprite



# Chase Game - Effects

- Add effects to octopus
  - Click **Costumes tab>Copy>Edit**
  - Use  and  to change the color of the octopus
  - Use **if-else statement** and **touching Dragon block** to change the costumes



# Chase Game - Initialization

- Set the initial positions of the dragon and the octopus

