LESSON 1

Introduction to Robotics and Dash

Go Application

Introduction:

Why robotics plays an important part in education? With a great emphasis being placed on science, technology, engineering, arts, and mathematics in our education system, robotics play an important part in motivating and exciting campers about these subjects. As campers program a robot they are exposed to STEAM concepts as well as learning how the robot interacts with its environment. They learn about these concepts in a real-world application and are required to apply them over and over again. These hands-on, minds-on activities help campers understand how science and technology are useful in their world and make connections to careers they may not have considered.

Lesson Objective-

Today we will:

Learn what a robot is and what it can do.

So We Can:

Define robotics, list different uses for robots, drive dash using the GO application and explain how the tablet communicates with Dash.

Content Vocabulary

1. ***Robot***- "a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer." (Google)
2. ***Coding***-A system of signals used to represent letters or numbers in transmitting messages. The instructions in a

Teacher Demonstration

Estimated Lesson Time: Approx. 20

1. Show campers Dash and model how to turn the power on and off.
2. Explain that the tablet is communicating with Dash using Bluetooth. Mention that Dash will not move unless we tell it what to do.
3. Model how to connect Dash using the tablet and the "Go" application.
4. Model the different features of the "Go" application:
    - Joystick
    - Speed
    - Head Movement
    - "Eye" light control

computer **program**. A way to communicate with the robot. (Google) 3. ***Programming***- the action or process of writing computer programs.	● Sounds ● "Ear" and "Chest" light control **<u>Extension Activity</u>** ***<u>Student Grouping:</u>*** Pairs (Recommended to group high/low campers together.) Create 5 stations that the campers will rotate through. The joystick will be used in all stations. **<u>Station 1- Speed Practice</u>** Campers will practice having Dash move with speed in all directions. **<u>Station 2- Head Movement Practice</u>** Campers will have Dash's head move in all directions. **<u>Station 3- "Eye" Light Practice</u>** Campers will use the "Eye" light and have it go on and off. **<u>Station 4- Sound</u>** Campers will have Dash make various sounds to become familiar with how to use this feature. **<u>Station 5- "Ear" and "Chest" Light Practice</u>** Campers will manipulate the "Ear" and "Chest" light getting familiar with how it works. *If campers are not showing an understanding*

	of any areas teacher can re-teach that specific command with that student or students. **<u>Lesson Closure:</u>** Ask students what we learned today in robotics? **<u>Possible responses:</u>** "We learned how to use a robot." "We were able to make Dash move and make sounds." "We used a program to make a robot move, talk and light up. *If students have any misconceptions remind them of the lesson objectives and ask the camper how they achieved success with that today.* Tomorrow we will be using what we learned today to drive Dash and compete with different challenges.