ACTIVITY SHEET

Basics of Robotics

In this session, we are going to create a script in PictoBlox that will let us control the movement of Quarky robot wirelessly, using the arrow keys of our device (PC/laptop or Smartphone).

*This activity sheet belongs to* _____

MATERIALS REQUIRED

☐ Computer/Laptop/Tab with PictoBlox installed   ☐ USB Cable

☐ Quarky Robot

STEP-BY-STEP

1. Let's begin by first connecting Quarky to PictoBlox.
   1.1. First, connect **Quarky** to your laptop using **USB cable**.
   1.2. Open **PictoBlox** and create a new file. Select the coding environment as **Block Coding**.
   1.3. Select the Board as **Quarky**. Next, select the Serial port to connect Quarky and press Connect.
2. *We want to ensure that Quarky moves forward only if the up arrow key is pressed. To check if it is pressed, we're going to use an if () else block.* Go to the Control palette and drag and drop an **if () else** block.
3. Now, go to the Sensing palette and add a **key () pressed?** block inside the diamond-shaped space of the **if** block. This block will check if the selected key is pressed. Here, the *up arrow* key is the default option.
4. If the *up arrow* key is pressed, we want Quarky to move forward. Therefore we will now add a **go () at () % speed for the () second** block.
5. Go to the Robot palette and add a **go () at () % speed** block inside the **if-arm** of the **if () else** block. Now, we need to do the same for the remaining three directions.
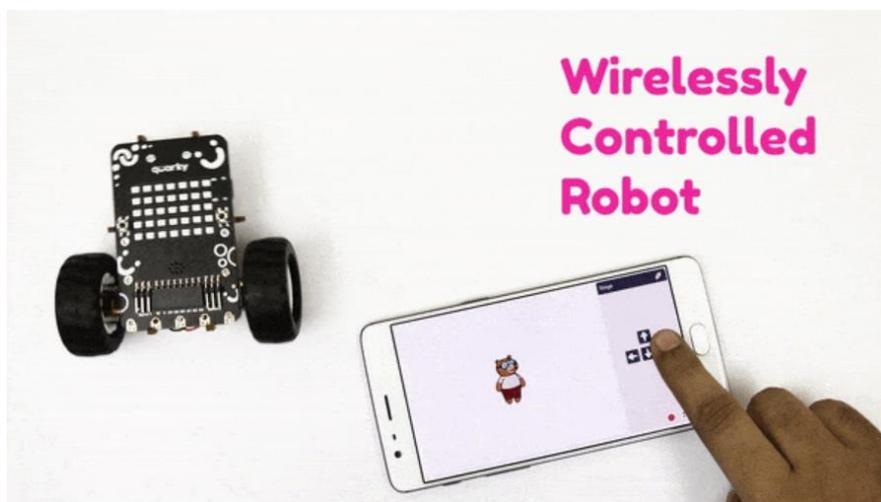
6. Duplicate these blocks by right-clicking the **if () else** block and drag the duplicated block in the **else-arm**. Then, in the **key () pressed ?** block, change the key to *down arrow,* and in the **go () at () % speed** block, change the direction to *backward*.

STEPS 2-7   *FINAL SCRIPT*
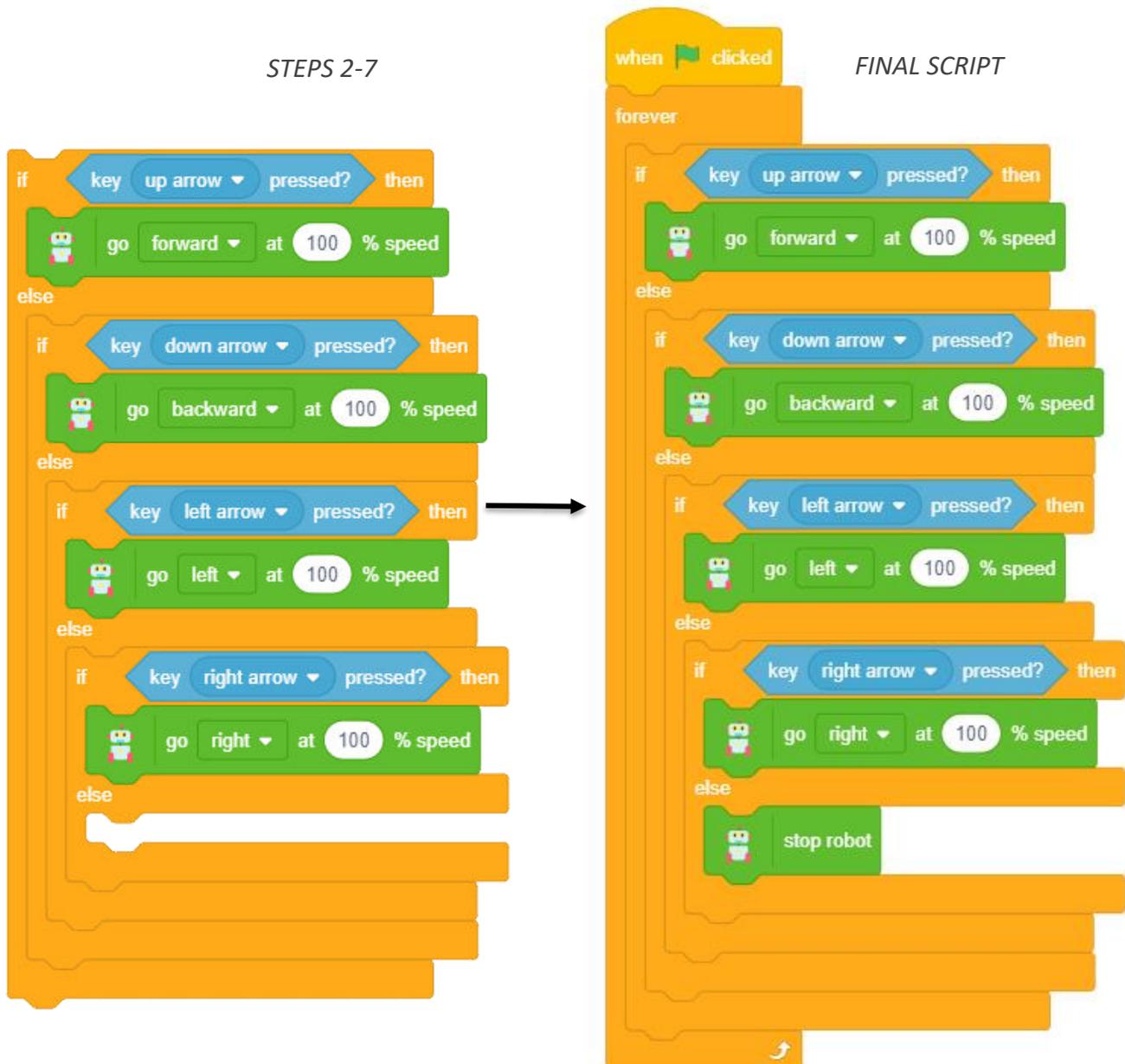
7. Repeat step **6** two more times for the remaining two directions (left and right).
8. Put the **stop robot** block in the last else branch *(as shown in the final script).*
9. Complete the script by adding a **forever** & **when flag clicked** blocks at the top *so that the script runs continuously (**forever**), whenever the **green flag** is clicked.*
10. Run the script by clicking the **green flag** and have fun playing.

SAVING THE PROGRAM

Save the project file as **Basics of Robotics.** Check page 3 if you missed how to save the project.