



Name: _____

Assessment Getting Started

- 1) What is a Breadboard used for in electronics?
 - a) To connect a circuit to a computer
 - b) To write code
 - c) To plug in and organize wires
 - d) To make a robot move

- 2) What is the purpose of connecting the Pico to the computer with a USB cable?
 - a) To charge the battery
 - b) To upload code and control the circuit
 - c) To make the computer move
 - d) To store files on the Pico

- 3) Why is it essential to connect the wires to the correct holes in the Breadboard?
 - a) So the Pico can turn on
 - b) To avoid damaging the Breadboard
 - c) To save power
 - d) So the circuit can complete, and the robot can move

- 4) What happens when you touch the two wires together after adding the code?
 - a) The code stops running
 - b) The Pico disconnects from the computer
 - c) The computer displays an error message
 - d) Piperbot moves in the EXPLORE tab

- 5) What is the significance of seeing Piperbot's point of view in the EXPLORE tab?
 - a) It shows that Piperbot is ready to launch
 - b) It allows you to check if the circuit is working correctly
 - c) It helps you control the computer
 - d) It confirms the Pico is charging

- 6) How might you apply the process of completing a circuit to move Piperbot in real-world robotics?



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7) Imagine you wanted to make Piperbot move in different directions using more wires and sensors. Describe how you might modify the circuit and code to achieve this.

8) Look at the Python code you've completed. This code checks if the circuit is complete by printing True or False when the wires are connected. How could you modify the code to make Piperbot print "Piperbot is moving!" when the circuit is complete and "Piperbot is stopped." when the circuit is not complete? Write the new code below.



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Answer Key Getting Started

- 1) C - To plug in and organize wires
- 2) B - To upload code and control the circuit
- 3) D - So the circuit can complete, and the robot can move
- 4) D - Piperbot moves in the EXPLORE tab
- 5) B - It allows you to check if the circuit is working correctly
- 6) *Example:* Students could explain that in real-world robotics, completing circuits is essential for controlling various robot parts, such as motors, sensors, or lights. They might relate this to how robots in factories or hospitals use similar circuits to perform tasks like moving objects, assisting in surgeries, or navigating spaces.
- 7) *Example:* Students might suggest adding wires to connect additional sensors to the Breadboard and Pico. They could describe how they would write code that detects which sensor is activated and then make Piperbot move in a specific direction based on which circuit completes, simulating more complex robot control systems like those used in autonomous vehicles.
- 8) *Example:*

```
## ---- Imports ---- ##
import time
import board
from digitalio import Pull
from piper_blockly import *

## ---- Definitions ---- ##

GP7 = piperPin(board.GP7, "GP7")

try:
    set_digital_view(True)
except:
    pass

## ---- Code ---- ##
while True:
    if not GP7.checkPin(Pull.UP):
```



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```
print("Piperbot is moving!")
else:
    print("Piperbot is stopped.")

time.sleep(0.2)
```

Explanation:

This modification challenges students to think about conditional statements and how to change the output based on the circuit's state.