Python with Robots **Mission 7 Lab Data Sheet – OBJ 1**	**Name:**

Objective 1: Presence Detector
Essential Question - What are "ideal" conditions in which to use proximity sensors? How can we program the 'bot to adapt to its environment?

Purpose: The purpose of this lab is to determine ideal values for a given surface.

Procedure:
1. Partner A will run the 'bot and program; Partner B will measure and record data.
2. Complete the lesson in CodeSpace and stop where it says to "*experiment with the code*"
3. Ensure you are keeping **all** conditions the same except for the variable you are testing.
4. With the program running, Partner A will line up the front edge of the 'bot on the test surface.
5. Partner B will line up the edge of the meter stick at the same front edge. Keeping your body out of the way of the sensors, place your white card outside its range and slowly bring it toward the 'bot. Note when the proximity sensors detect the object. *Note-You may find that one sensor is more sensitive than the other. Be careful to be consistent in your procedure.*
6. Repeat 3 times to ensure you are getting similar results.
7. Partner B will note measurements in the data table.
8. Repeat for each condition

Materials:
- CodeBot, CodeSpace, USB cable
- Test surfaces (white, gray, black)
- Meter stick
- White notecard or paper

Hypothesis:

What are the constants in your experiment?

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Obj. 1 Presence Detector: Use the "Test Surface" color blocks to find the distance needed for the proximity sensor to detect the surface color. You can also use other surfaces.

Color of surface	Distance for True
Open space	
Black	
Gray	
White	