LESSON OBJECTIVES

1. Learn how to retrieve and use data from your sensors
2. Learn how to use Device Browser on the EV3 Brick
3. Learn some examples of when and the data from the Device Browser would be useful
4. Try to solve some common problems using this data
WHY DO YOU NEED SENSOR DATA?

Sensor data can be:

• Used to help program more easily (no more guess and check!!)

• Used to help program more accurately

• Used to debug code as well as build issues

Device Browser is an easy way to access SENSOR DATA!
HOW DO YOU GET TO PORT VIEW?

Information about sensors and motors can be found in the Device Browser.

From the menu, use the down arrow on the EV3 brick to navigate to the Device Browser.
Inside Device Browser, use the down button the EV3 brick to get to Sensors

Pick the sensor you want

Go down using the down button to Watch Values

Select Watch Values using the middle button on the EV3 brick
Setting Sensor Modes

- Scroll down to Sensors in Device Browser using the down button on the brick
- Pick the sensor you want and scroll down to Set Mode
- Change the modes of the sensor

- You can access more modes on the Gyro Sensor in Python than you can using EV3-G
ANOTHER EXAMPLE: COLOR SENSOR IN PORT 1

- You can access more modes on the Color Sensor in Python than you can using EV3-G
Device Browser → Motors

Select Motor e.g. Motor B

Select Watch Values

Rotate a motor and watch the values change
DEVICE BROWSER CAN BE POWERFUL

As you go through the rest of the lessons on EV3Tutorials.com, you might need to use this feature on the EV3 brick.

As you complete each challenge, think about data from Device Browser might be helpful.

The next page has many several examples to think about.
OTHER PROBLEMS YOU CAN SOLVE WITH PORT VIEW

Challenge 1: Program Easier/More Accurately
I want to go from a starting point up to a LEGO model. I keep having to guess and check. How can I figure out how far away the LEGO model is?

Challenge 2: Program Easier/More Accurately
I want my robot to turn 90 degrees. But 90 degrees in the real world is not 90 degrees in the steering block. So, how much does my robot have to turn to make a 90 degree turn?

Challenge 3: Debug Code
The robot does not follow the green line like I programmed it to do. Why not? What color does the robot think that green line is? Try placing the robot on different objects or parts of mat/picture – what colors or reflected light values does the sensor read?

Challenge 4: Check Builds
I built my robot with the touch sensor a little bit inside the robot. I am not sure that the touch sensor is getting pressed enough. How can I make sure the sensor is getting pressed?

Challenge 5: Test Sensors
I told my robot to stop when the Ultrasonic sensor is 20cm away. But it seems to stop earlier. Is the sensor working correctly? How can I see what the ultrasonic sensor sees?
CREDITS

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More lessons are available at www.ev3tutorials.com

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