Gyro Sensor Positioning

By Sanjay and Arvind Seshan

ROBOT DESIGN LESSON
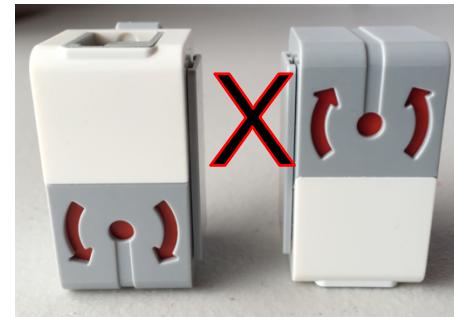
HOW MANY GYROS SHOULD YOUR ROBOT HAVE?

- **Depends on how many different axis you want to measure**

- **For example, if you were making a joystick, you might need two**

- **Note: We conducted a test to see if adding two gyro sensors will allow you to cancel out drift.**

  - Our tests show that two sensors may allow you to average your error, but do not cancel/reduce the drift.

  - To learn about drift and lag, see our Gyro programming lessons in Advanced.
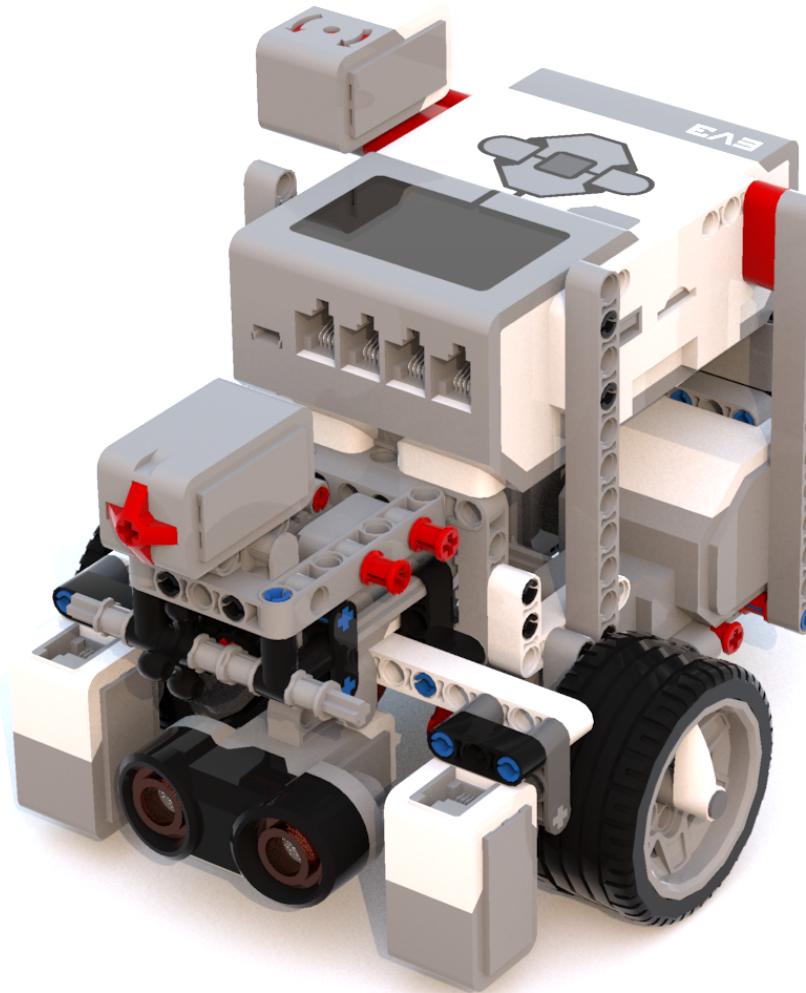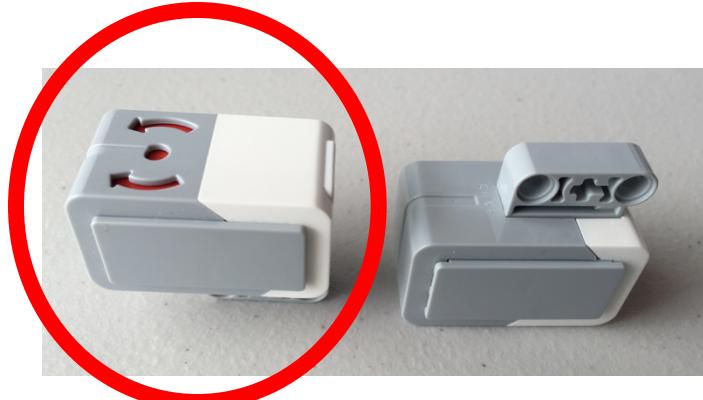
GYRO SENSOR PLACEMENT FOR MEASURING TURNS

- The gyro sensor can be placed any where on the robot.

- However, the "correct" position depends on what you are building

- If you are using the gyro to measure turns, some positions just will not work. (Refer to images on this page)
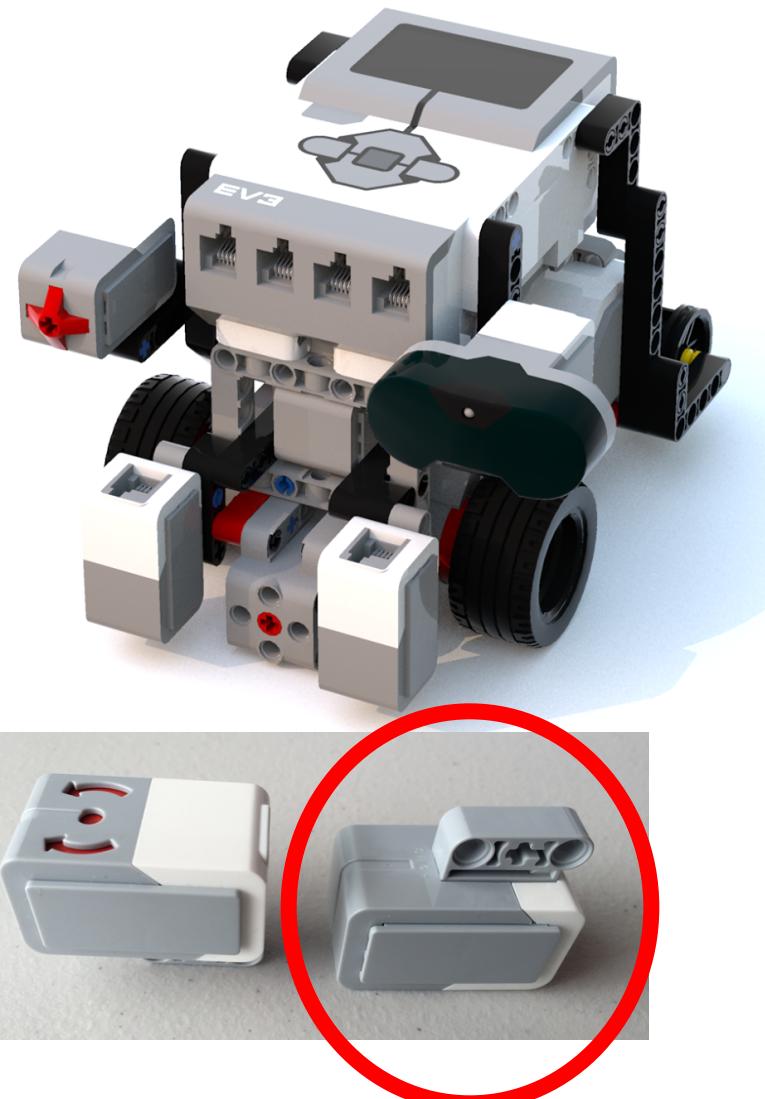
SAMPLE INSTALLATIONS OF THE GYRO

- **In this robot, the Gyro Sensor is prominently visible**

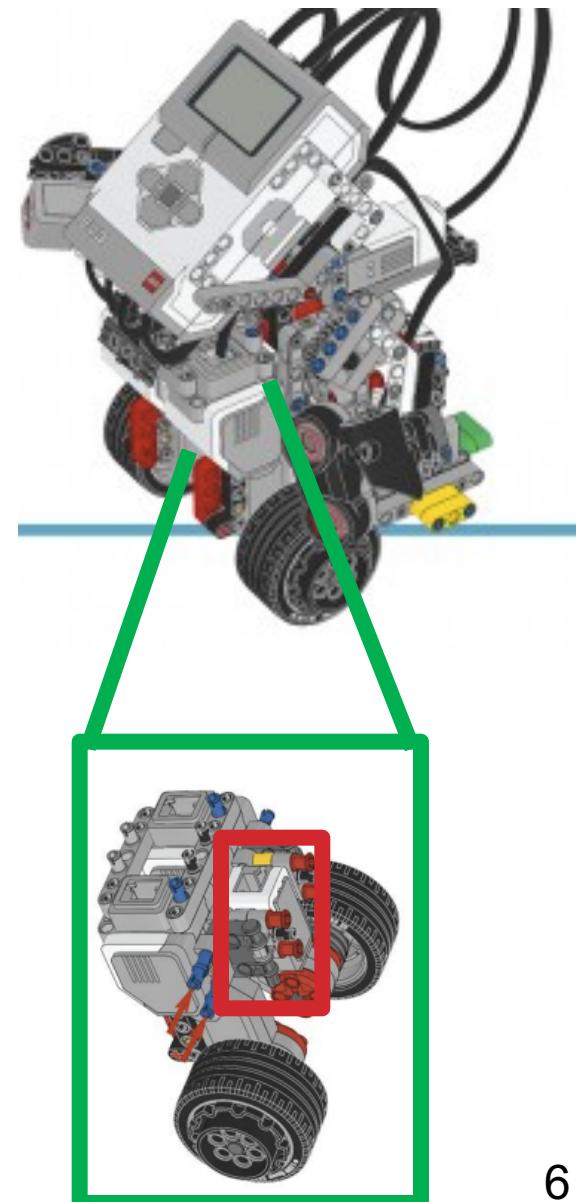- **The symbol on the sensor is parallel to the ground**

SAMPLE INSTALLATIONS OF THE GYRO

- **In this robot, the Gyro Sensor is barely visible and under the brick**

- **The symbol on the gyro is still parallel to the ground**

- **Tip: Place the sensor where you have space on the robot (somewhere hidden away is fine as you do not really need access to it once you connect it).**

GYRO POSITION FOR A BALANCING ROBOT

- **The gyro needs to be placed based on what you are trying to do**

- **For a balancing robot (such as Gyro Boy) you need to have to gyro facing the sky or the ground**

- **The gyro sensor in this model is hidden between the two motors**

GYRO POSITION FOR A TILTING ROBOT

- **For a game like Etch-a-Sketch, where you tilt the entire robot to erase the screen, you need the gyro to be sideways (see image)**

- **The gyro in this robot does not measure turns. It measures if you flipped the robot**

CREDITS

- **This tutorial was created by Sanjay Seshan and Arvind Seshan**

- **More lessons at www.ev3lessons.com**

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