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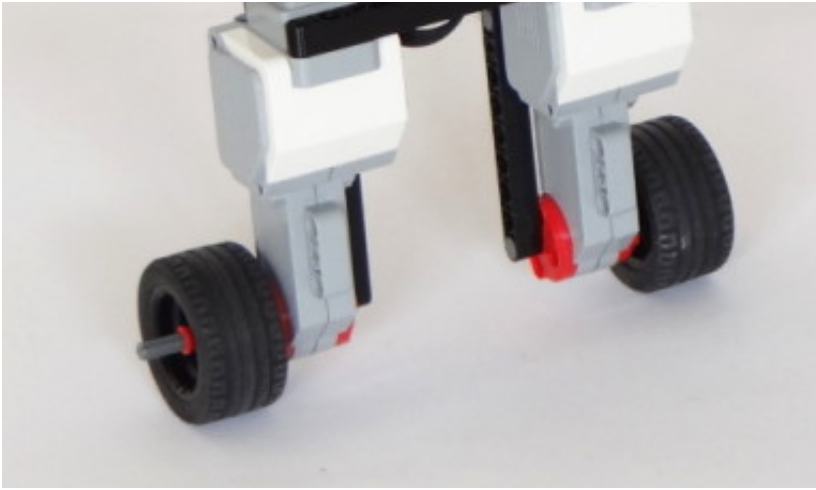
Tutorial: Building BALANC3R

 EV3, EV3 BUILDING

DISCOVER LEGO MINDSTORMS EV3



Discover the many features
of the EV3 set, and learn to
build and program your



This tutorial provides step-by-step instructions to build BALANC3R, a self-balancing LEGO MINDSTORMS EV3 robot.

Requirements

- 1x LEGO MINDSTORMS EV3 #31313 Home Edition. (If you have the LEGO MINDSTORMS EV3 Education Core set #45544, you can build Gyro Boy instead.)



1x LEGO MINDSTORMS EV3 Home Edition

- 1x Gyroscopic Sensor. Use one of the following sensors:

own robots! Learn more

START BUILDING ROBOTS



WEBSITE MAINTENANCE

Robotsquare is currently being updated, which means that it may look a little different (and not very polished) for a while. All the content and pages should still be there, though. It should be back and fully operational soon. Thanks for your patience!

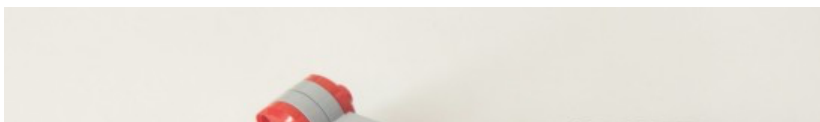
- EV3 Gyro by LEGO (pictured below)
 - NXT Gyroscope by HiTechnic
- Both sensors work great in this project, but here are some considerations before you buy:
 - The EV3 Gyro is cheaper. It can measure the angular rate and estimate the accumulated angle. The accumulated angle is not used in this project, but it may be helpful for other projects, such as making accurate turns.
 - The HiTechnic Gyro is more accurate for this application because of the increased resolution. It can only measure angular rate.

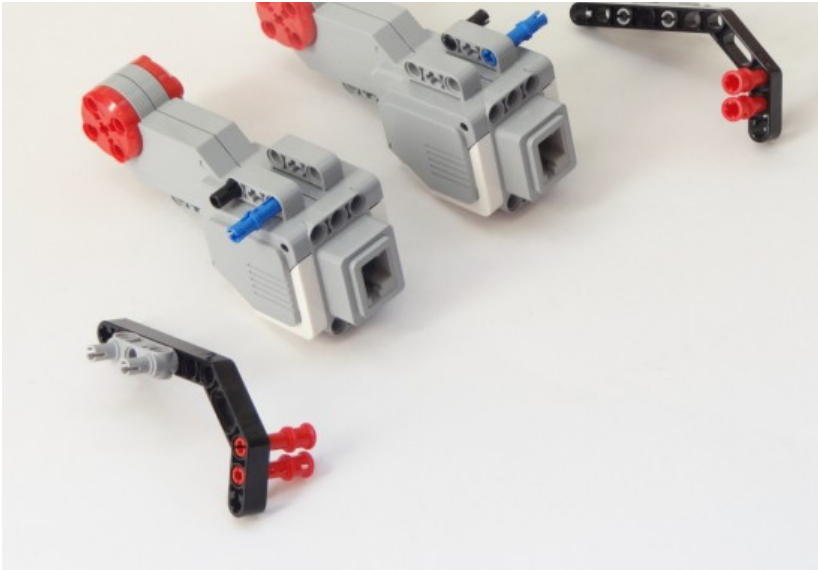


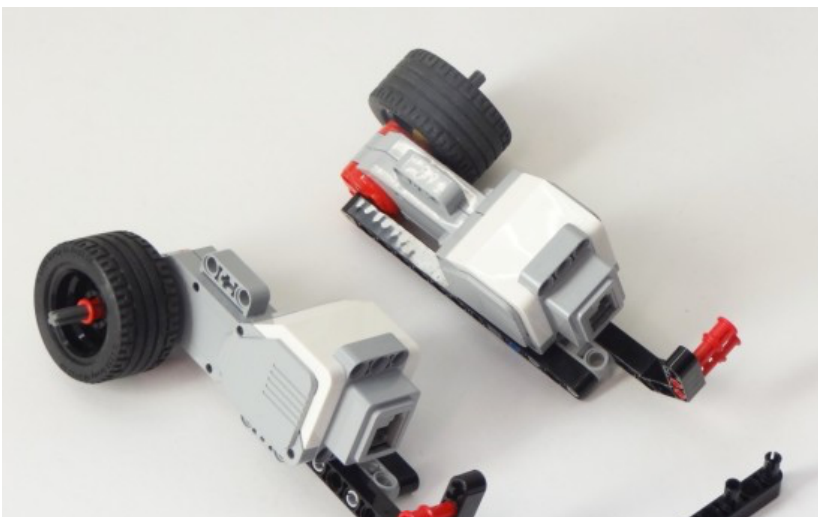
1x LEGO MINDSTORMS EV3 Gyroscope

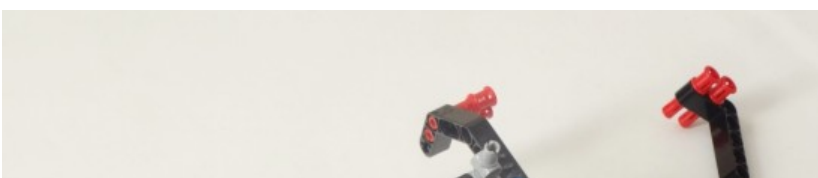
Building Steps

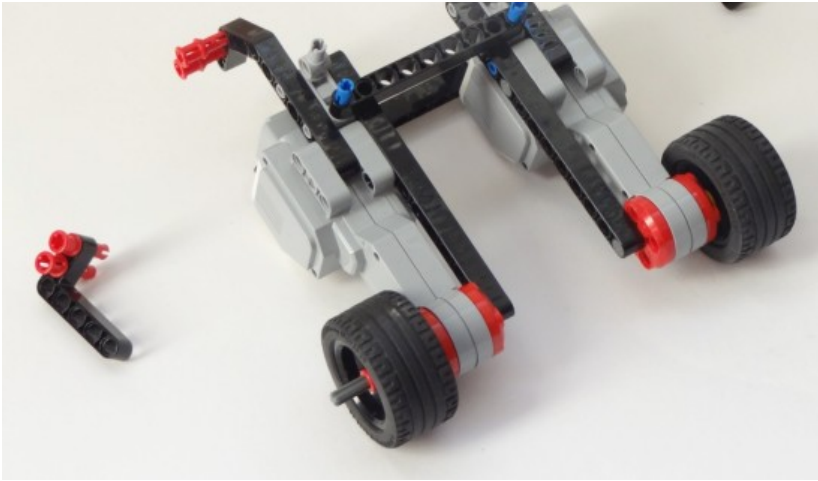
Build the robot by following the steps in order. Click on the pictures for a bigger image. Be sure to connect the motors and sensors to appropriate port on the EV3 brick as indicated by the port icons.

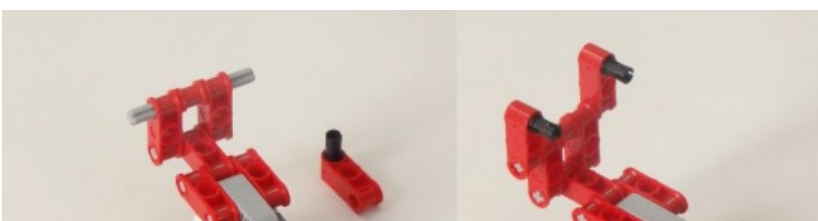
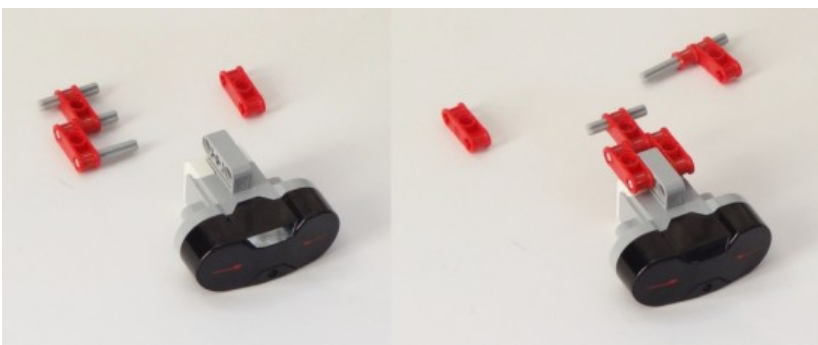


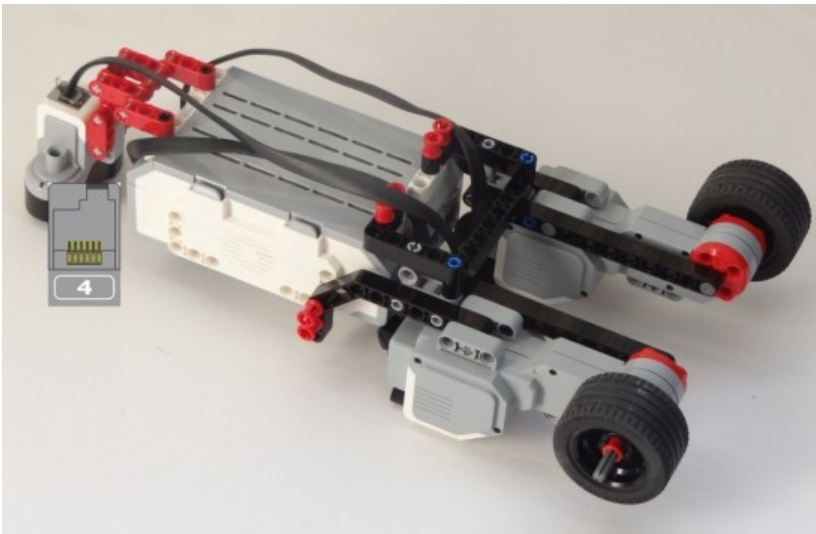




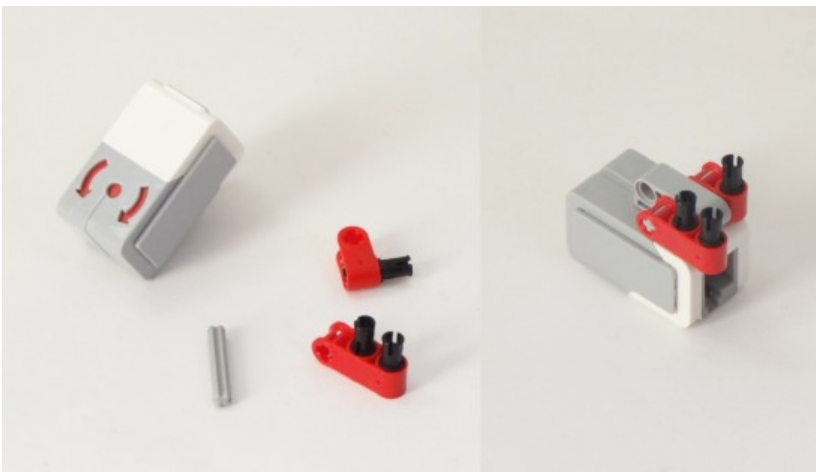




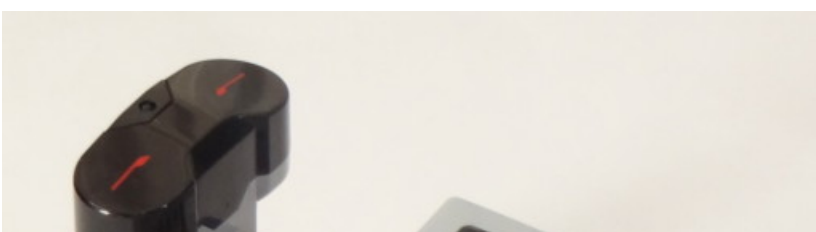




The following two steps are for the LEGO MINDSTORMS EV3 Gyroscopic sensor only. Skip these steps if you have another sensor.



Attach the LEGO MINDSTORMS EV3 Gyro sensor as follows. Be sure to connect it to the side of the EV3 brick with the USB port.



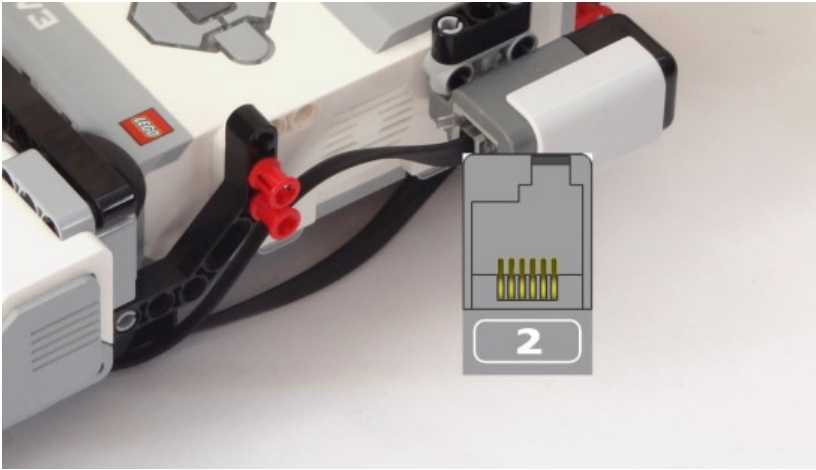


The following two steps are for the HiTechnic Gyroscopic sensor only. Skip these steps if you have another sensor.



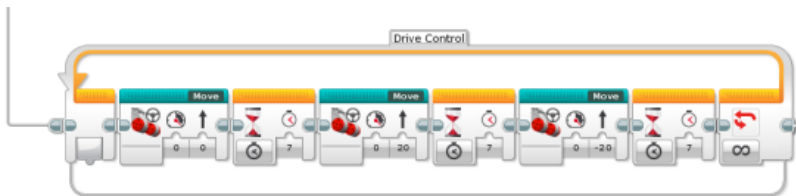
Attach the HiTechnic Gyro sensor as follows. Be sure to connect it to the side of the EV3 brick with the speaker.





Programming

Now that you've finished building your robot, you're ready to program it. See [this article](#) for instructions.



[Click to go to the programming tutorial.](#)



About the author

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