COLOR SENSOR SHIELDING TECHNIQUES

By BrainSTEM Robotics and Droids Robotics, 2015

In this guide, FTC 8393 Giant Diencephalic BrainSTEM Robotics, an award-winning former FLL Team from Pittsburgh, PA share with us some of their building techniques.

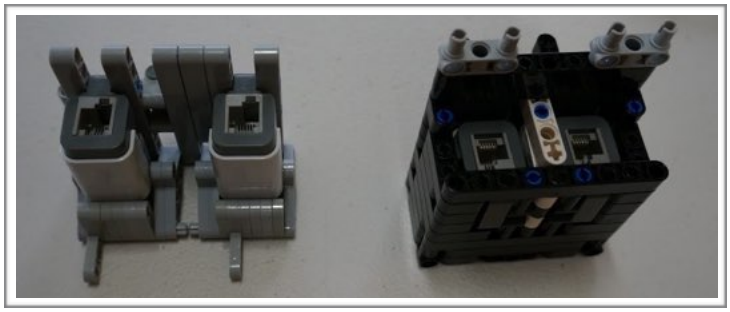
What is Color Sensor Shielding

Shielding refers to surrounding your color sensors with beams to prevent ambient light from interfering with the color sensor's readings. This is especially valuable if you run your robot in drastically different light settings. For example you might run the robot in a very sunny room once and then have to run it in a very dark room later. The EV3's color sensors tolerate ambient light better than NXT sensors, but they still work better with shielding.

How do you shield sensors?

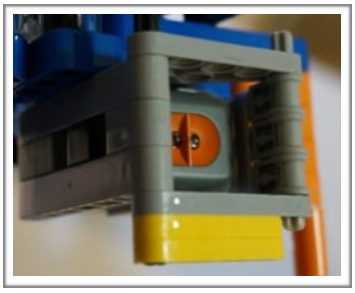
There are many ways to construct color sensor shielding. You should use a technique that makes sense for your robot design. The goal is simply to make sure that no ambient (external) light enters the color sensor.

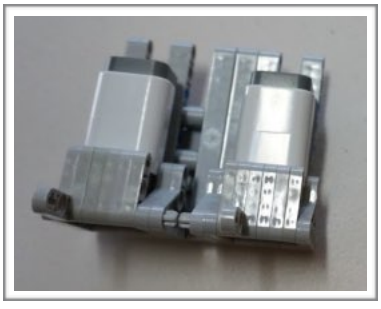
Examples: In this first picture below, two color sensors have been assembled together as one module.



Notice the smooth LEGO pieces around the bottom of the assembly on the left. This shielding is very low to the ground and the smooth plates reduce friction. The sensor is placed a bit higher from the base of the shielding.

Notice in the images below that all sides of the sensor are not covered. There is no real need as you only care about the bottom.





Photos of actual builds by BrainSTEM Robotics shared with permission.