

FIRST® LEGO® League

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LESSON 8: LINE FOLLOWING

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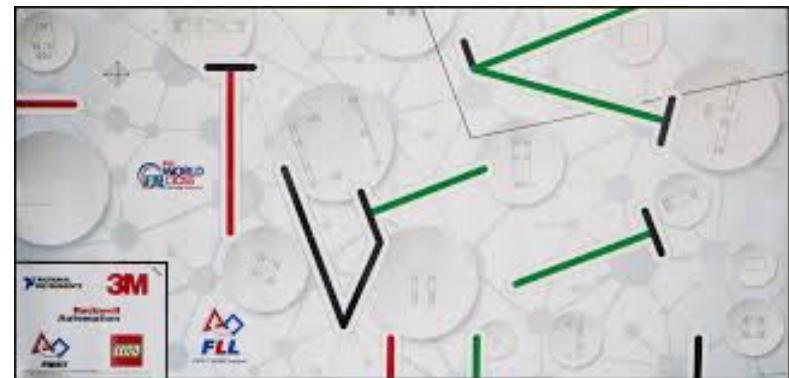
WHY IS LINE FOLLOWING IMPORTANT?

- No matter what season of FIRST LEGO League you are competing in, you will find that the challenge mat has lines
- Lines can help you navigate to the far end of the board reliably
- Lines can help you get to a mission model
- Learning to line follow is crucial in FIRST LEGO League



HANDLING COLORED LINES

- In some seasons, FIRST LEGO League mats have had colored lines
- **Problem:** Colored lines on the mat are sometimes not LEGO colors, meaning they are hard to detect in color mode. In addition, in reflected light mode, the red reads a very high value making it not distinguishable from white. This is because the color sensor shines a red light.
- **Solution:** Color mode works reliably for detecting the red on the mat so color mode can be used. For the green, only reflected light will work on it because it reads a low value that is almost black.



FINDING USEFUL LINES

- Lines often are designed to go to a mission model and help you navigate
- If you line follow with your color sensors, you will be where you need to be
- Look for useful lines to follow



NOT-SO-USEFUL LINES

- Sometimes, lines are too close to a mission model to line follow
- Therefore, you would have to apply other techniques
- You don't have to line follow on every line



TIPS FOR LINE FOLLOWING

- Make sure you are actually on the line before you line follow
 - 1. Move Until the Line
 - 2. Turn a bit to become straight to the line



NEXT STEPS

- Complete the line following lessons on EV3Lessons.com
 - Beginner: Basic Line Follower
 - Intermediate: Color Line Follower
 - Advanced: Proportional Line Follower

CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons at www.ev3lessons.com and www.flltutorials.com



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