

Robot Design Pre-Season Navigation Challenges

MASTERPIECE

Reliable navigation is very important in *FIRST* LEGO League Challenge. We have four challenges for you using an empty MASTERPIECE mat. You do not need to have any build instructions to complete these challenges. You can work on these challenges before the season launch in August. If you have not registered and do not have a MASTERPIECE Challenge Mat, just create some lines using black electric tape on a white poster or use a previous year's mat to learn similar skills.

Use EV3Lessons.com or PrimeLessons.org to learn the programming skills needed to complete the following skills:

Skills you will need to learn in the process:

Line Following

Squaring on a Line

Moving Until a Color/Intersection

Aligning on a Wall

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CHALLENGE: 1) Line follow, 2) Stop at the end of the line

(Tip: How many degrees will it take to reach the end of the line? How can you calculate this?)



CHALLENGE: 1) Go straight until the black line, 2) Square up (straighten out) on the line

(Tip: Having two color sensors on either side of your robot allows you to straighten out easily.)



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CHALLENGE: 1) Move Forward, 2) Turn 90 degrees and straighten out on a wall, 3) Move forward
(Tip: To straighten out on a wall, you will need to make sure your robot has a flat surface.)



CHALLENGE: 1) Line follow, 2) Stop at the first intersection

(Tip - having two color sensors on your robot allows you to identify when a line has been reached on one side)

