

**FIRST**® **LEGO**® **League**

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LESSON I:  
INTRODUCTION TO NAVIGATION

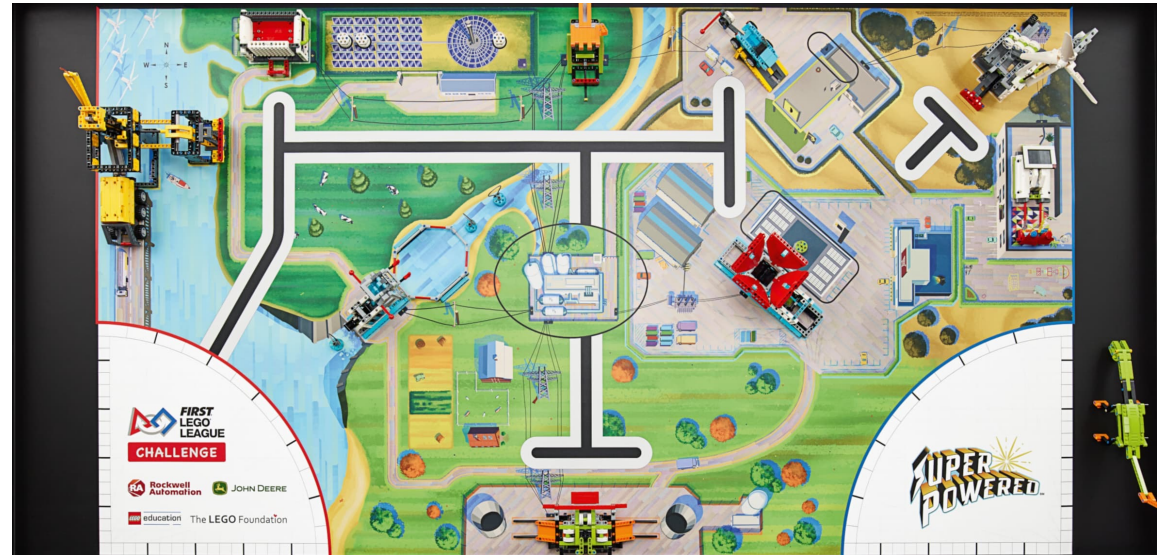
SESHAN BROTHERS

# WHAT IS NAVIGATION IN FIRST LEGO LEAGUE?

- Navigation is getting your robot from base to where it needs to be
- Navigation needs to be both reliable and repeatable
- To accomplish this, you need to learn several strategies

# NAVIGATING RELIABLY IN FIRST LEGO LEAGUE

- Good navigation will use some or all of these techniques
  - Aligning in Base
  - Wall following
  - Aligning on lines
  - Aligning on walls
  - Aligning on mission models
  - Line following



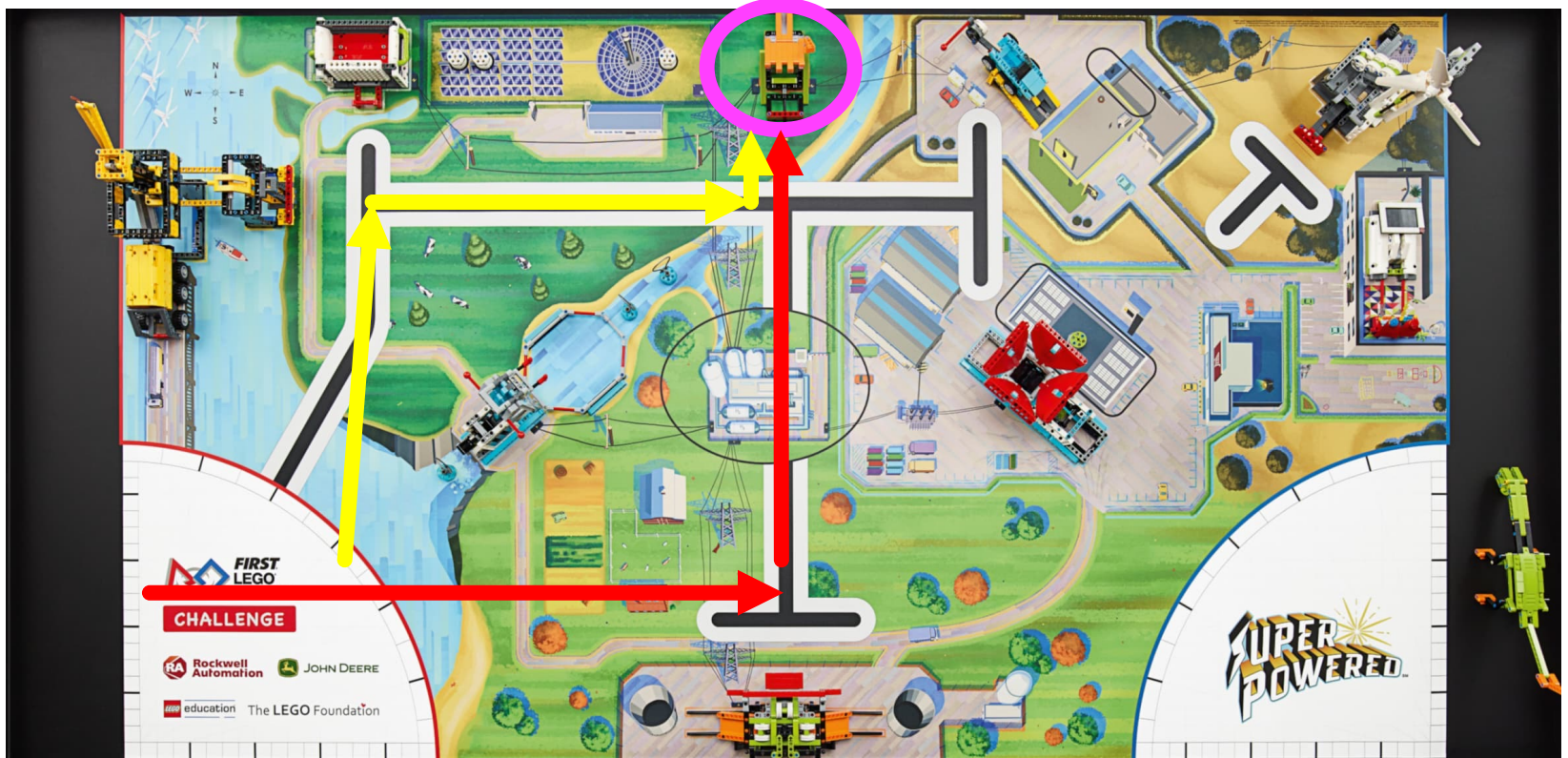
# DISCUSSION

- Let's say we want to go from Launch to the mission marked with the pink circle.
- What can you do to get there reliably?



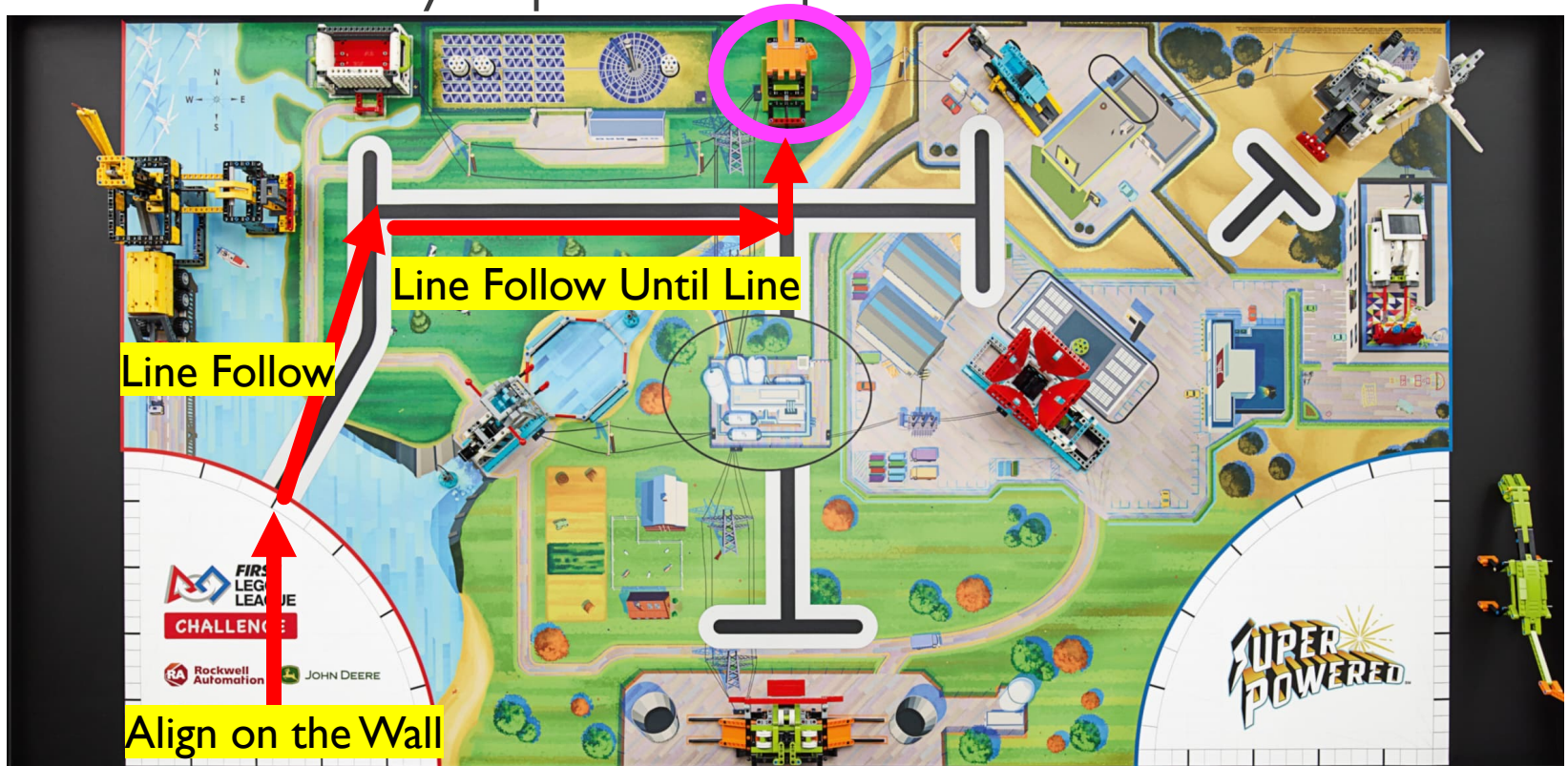
# SELECTING A ROUTE

- There may be more than one path to get to the destination
- What would it take to make the red or yellow path reliable?



# POSSIBLE SOLUTION (RED)

- Different paths may have more opportunities for alignment or introduce obstacles that make your position less predictable



# WHAT'S NEXT

- Let's learn some building and programming techniques to achieve each of these strategies
- As you go through the lessons think about how your team can apply the technique to this year's Challenge.

# CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons at [www.ev3lessons.com](http://www.ev3lessons.com) and [www.flltutorials.com](http://www.flltutorials.com)



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