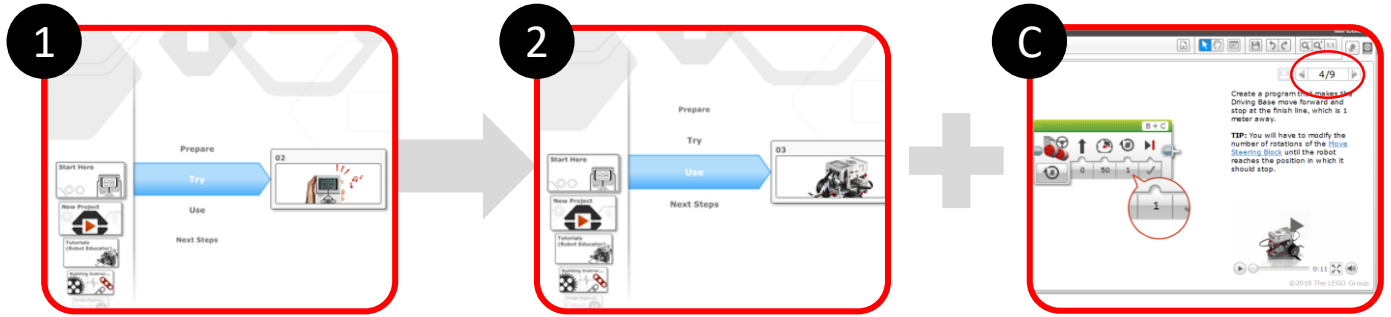


The challenge (C.) in each Robot Lesson is optional, dependent on time

Robot Lesson 1

Learn the basics and build your first robot driving base.

1. Start Here -> Try
2. Start Here -> Use, page 3
- C. Start Here -> Use, page 4

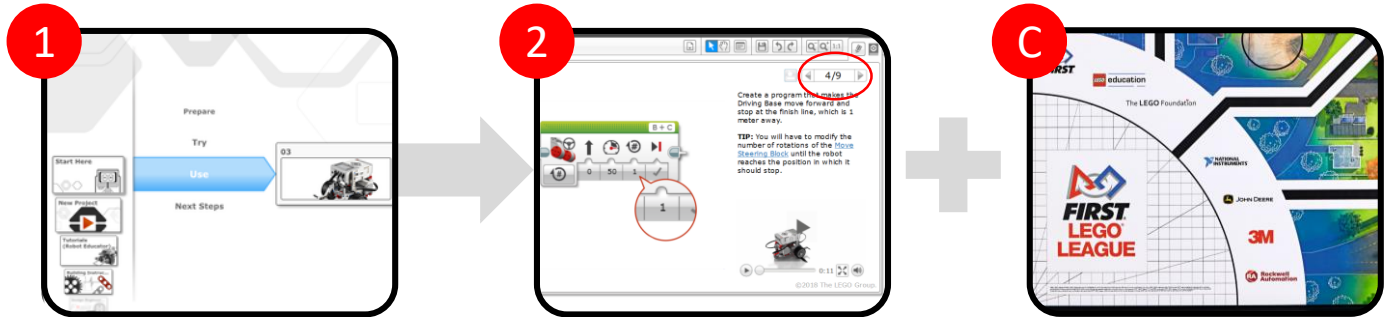


Remember: Take the driving base apart at the end of the session, so the other group can build it next time.

Robot Lesson 2

Program your robot to move in different ways.

1. Start Here -> Use, page 3
2. Start Here -> Use, page 4-8
- C. Use what you've learned to drive your robot across the Game Field. Use the cube as a stopping point.



Remember: Make sure you have a robot game field set up on the floor or table for the end of this session.

Robot Lesson 3

Program your robot to move and stop in different ways.

1. Tutorials -> Basics -> Straight Move
2. Tutorials -> Basics -> Stop at Object
- C. Tutorials -> Basics -> Tank Move



Remember: Moving around the robot game field in different ways will help you score more points.

Robot Lesson 4

Program your robot to interact with game objects.

1. Tutorials -> Basics -> Curved Move
2. Tutorials -> Basics -> Move Object
- C. Use what you've learned to modify the program and attachment to deliver the Building Units to the Game Field.

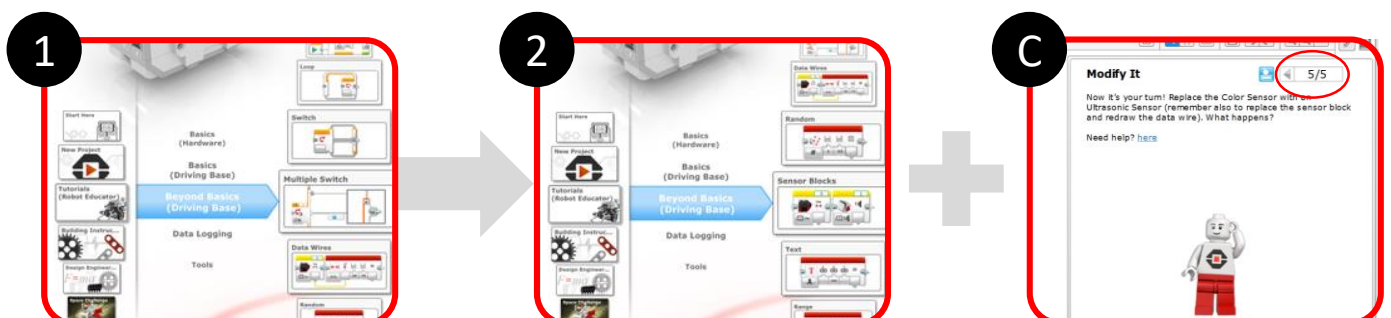


Remember: Interacting with, and moving, objects on the robot game field is how you score points.

Robot Lesson 5

Learn to use sensors in more advanced ways.

1. Tutorials -> Beyond Basics -> Multiple Switch
2. Tutorials -> Beyond Basics -> Sensor Blocks
- C. Tutorials -> Beyond Basics -> Sensor Blocks, page 5



Remember: Using different sensors during the game will help your robot be more efficient and effective.

Robot Lesson 6

Learn to stop at and follow lines.

1. Tutorials -> Basics -> Stop at Line
2. Tutorials -> Beyond Basics -> Switch
- C. Tutorials -> Beyond Basics -> Color Sensor - Calibrate



Remember: Following and stopping at lines on the robot game field is a great way to navigate.

The Crane Mission (Mission 2)

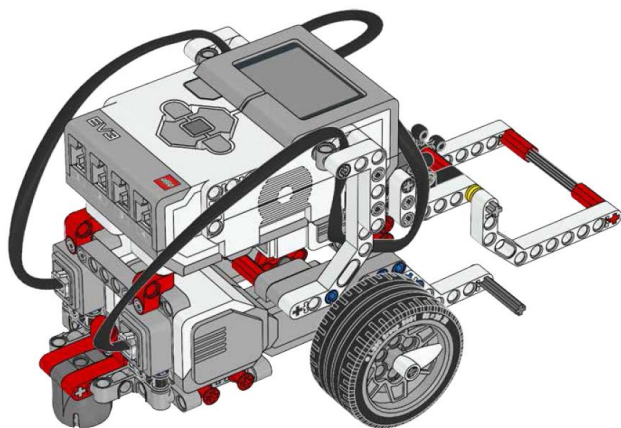
Robot Lesson 7

Learn to complete your first FIRST LEGO League mission.

Task 1

Follow the instructions to build the attachments for your robot to solve the Crane Mission.

1



You will need this basic robot to solve the Crane Mission. You can build on the robot and modify the attachments and programs later.

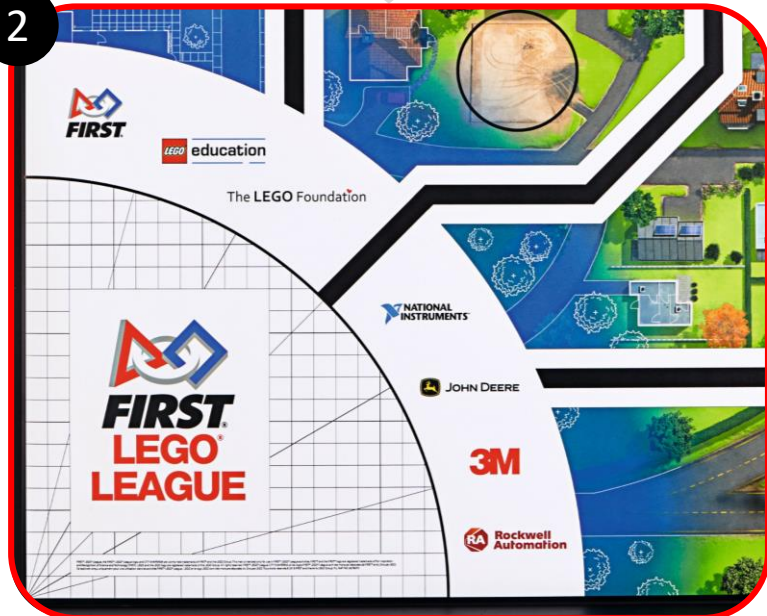
Where are the building instructions?

You can find a PDF of the building instructions where you found this poster, on the FIRST LEGO League Resources page on firstinspires.org.

Task 2

Use the program below to tell your robot how to solve the Crane Mission (Mission 2).

2



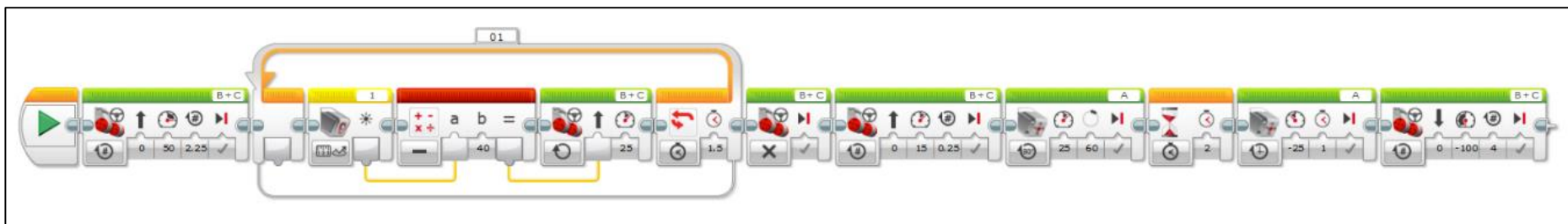
Remember to set up your robot in the Launch Area before you press go and run the program.

Look carefully at where the robot should be placed and pointed before launching it.

Practice launching the robot a few times. Modify the program using your knowledge of Curved Move and Tank Move so that it ends in Home.

Can I download the EV3 program?

You can find a file for the Crane Mission program where you found this poster, on the FIRST LEGO League Resources page on firstinspires.org.



This code will drive the robot out of the Launch area, detect and follow the line directly to the crane, and then activate the lever to drop the blue unit. The red blocks are called 'Math' blocks. You can learn more about them in Tutorials > Beyond Basics > Math - Basic.

Challenge

Use what you have learned to design a way to drop the Blue Unit into the blue circle.

C



Do you notice anything about the Crane Mission? How many levers does it have? What does the Crane do when you activate the levers?

Can you rotate the Crane before activating it to drop the building unit?

What if the Crane doesn't work?

- Check the Crane is built correctly and moves as it should.
- Check the Dual Lock and that the Crane is correctly positioned on the mat.
- Reset the Crane after each activation.