

First Lego Assignment – Lego Robotics Tutorial

Lego robotics combines drag-and-drop programming (like Scratch) and fairly advanced processor and sensors (like Arduino) with motors that can make things move. Like much of engineering it can seem daunting at first, but these instructions will help you learn quickly.

Install two disks on your computer: **Mindstorms NXT 2.0** and **Robotics Engineering volume 1**.

Review the information on the **Robotics Engineering** software first. Watch the movies, and follow the steps with your own equipment. Review the following sections:

1. Introduction

- A. Quickstart
 - The NXT
 - Build test bed
 - Test Run
- B. Using the lessons
- C. Using the Programming Software

2. Basics

- A. Using the programming software
- B. Robot behaviors – click on a few sections to see the instructions that are displayed
- C. NXT menus
 - Running a program
 - View Sensor Values
 - Intro to deleting
- D. Building Instructions
 - Build a taskbot – also note that instructions for attaching sensors are here
- E. NXT sensors – look around at information offered about sensor settings

3. Projects

Use your robot to go through projects 1 thru 5, and also the first 5 investigations.

Review the information on the **Mindstorms NXT 2.0** software help section. Start the software, and click on the Help/Contents & Index tab at the top. Scroll down the long list of topics at the left. Pay special attention to the following sections:

1. General topics – data wires
2. Common blocks – loop block, switch block, wait block
3. Data blocks – compare block, variable block, random block

Now that you have mastered the introductory materials you need to do 3 of 10 robot challenges and integrate a sensor of your making to the robot before moving on to building an AUV or ROV.