OBJECTIVE: Students will learn how to test their robot to see if it is working and how to troubleshoot if it does not work properly. This will help students learn about the thinking process of testing and troubleshooting.

PRELAB: Based on how the assembly of the robot has gone do you expect it work? Did you run into any problems during the assembly that might affect the performance? How could these problems affect the performance?

INLAB: Students will use the instruction book prepared by Greymark to go through the testing and troubleshooting procedures. Students will test each part of the robot to see if it is working properly and if not then decide what is wrong and fix it. If students are having trouble with troubleshooting they should ask the TA for suggestions.

PROCEDURE:

Complete the following steps to perform the lab:

1. Combine the electrical and mechanical parts.

2. Insert the required batteries into battery holder.

3. Check each part of the robot to see if it works properly.

4. If there is some part of the robot that does not work properly think about the reasons for this (see suggestions below).

5. Test your predictions one at a time and see if that fixes the problem. This will help to determine what does not work and what does work and why.

6. When you finish the parts inventory, fill and sign the Daily Log. Keep it in the box until next lab.

List of suggestions for troubleshooting:

1. If it is an electrical problem, check to see if there is a good connection (i.e. a good soldering job). This can be done by using the Ohm meter to test for continuity between each wire.
2. If it is an electrical problem, check to see if the parts where put in correctly or have been damaged.
3. If it is a mechanical problem, check to see if the part was put on correctly.
4. If it is a mechanical problem, check to see if the part has become loose.