



## DSBN Elementary Robolab Robotics Challenge 2008

**CHAIR :** Leonard Aylward

[Leonard.Aylward@dsbn.edu.on.ca](mailto:Leonard.Aylward@dsbn.edu.on.ca)

### **PURPOSE OF THE CONTEST:**

Co-ed teams of four students from schools across The District School Board of Niagara will have an opportunity to compete with one another in a friendly environment to demonstrate their creative, collaborative and problem-solving skills in solving an open-ended challenge.

### **EVENT DETAILS:**

Date: February 21, 2008

Time: 9:00 - 3:45

Location: Walker Centre, Brock University

### **SKILLS AND KNOWLEDGE TO BE TESTED:**

The Robotics Challenge will have a rubric scoring system based on points. Points are awarded as the robot successfully meets/completes certain performance criterion.

Overall team score will be the sum of the points awarded for each of the three events: the competition, the quiz and the poster contest.

Judges will oversee the three events of the competition plus the quiz and poster components of the competition.

Teams are expected to:

1. neatly assemble a successful solution to the challenge within the time constraints
2. demonstrate mathematical, scientific and technological knowledge
3. demonstrate sound design, construction, and programming principles
4. demonstrate an efficient use of materials
5. demonstrate best practices in using materials, computer hardware and software
6. model a collaborative distribution of tasks
7. follow safe working practices
8. organize and present an informative solution to the challenge

## **SAFETY REQUIREMENTS:**

Competitors are required to follow all industry safety standards during the competition.

## **EQUIPMENT, MATERIALS, TOOLS AND SUPPLIES:**

### **Equipment Supplied by the Contest Coordinator:**

The following materials will be provided at the contest site.

1. Competition playing surface will be provided for official competition. No other equipment will be allowed in the competition area.
2. MS Publisher, Word Perfect and Corel Draw graphics program as Well as Robolab 2.5.4 will be available
3. A limited number of spare motors, sensors and lego parts will be available

### **Equipment Supplied by the Competitor:**

1. Teams are required to bring, and should be familiar with the use of the following systems, processes, and resources.
2. Lego Robolab or Mind storms kit, including software suitable for Windows XP, batteries, Lego parts, etc. Kits should include at least three (3) motors and one light sensor.
3. Spare Batteries for the RCX or NXT box
4. Lego Robolab or Mind storms construction and programming manuals, etc.
5. Digital Camera
6. Disks other devices to make backups of your programming solutions
7. Extra sensors or motors might be required depending on the team's approach to the challenge

Kits for the robotics challenge can be ordered from Spectrum Ed.

( Note: if you are unable to provide a Robolab kit or the appropriate software please contact the competition coordinator, one can be made available for you)

Team Challenge Set 89793 (Serial COM port IR tower) or 89794 (USB IR tower)

9V gear reduction motor 85225 - \$22.99

Mind storms For Schools Software 800621 (Single) - \$96.99 or

Mind storms For Schools Software 800631 (Site License) - \$243.99

**Teams will be permitted to use the new Lego NXT kits ( please bring your own software)**

8. **Teams are required to bring their own computer** or two if available ( laptop or desktop) for the competition. If you are unable to secure the use of a computer please contact competition coordinator and one can be arranged for you.
9. Teams are free to use any software they have for the poster portion of the competition, (Word perfect and Corel Draw will be available)

### **CLOTHING REQUIREMENTS:**

Casual business attire.

### **PROJECT AND COMPETITION EXPECTATIONS**

This Years challenge will be centered around the theme “Technology and the Environment” Teams are expected to arrive at the competition with a maneuverable drive train already built. There will be competition time allotted for programming, modifications and strategy.

**A small maneuverable robotic base will serve your team best.**

The Robotics Challenge will have a rubric scoring system based on points. Points are awarded as the robot successfully meets/completes certain performance criterion. Overall team score will be the sum of the points awarded for each of the three events: the competition, the quiz and the poster contest.

Judges will oversee the events of the competition plus the quiz and poster components .

### **Teams are expected to:**

- . neatly assemble a successful solution to the challenge within the time constraints
- . demonstrate mathematical, scientific and technological knowledge
- . demonstrate sound design, construction, and programming principles
- . demonstrate an efficient use of materials
- . demonstrate best practices in using materials, computer hardware and software
- . model a collaborative distribution of tasks
- . follow safe working practices
- . organize and present an informative solution to the challenge
- . A competition playing surface will be provided for official competition. No other equipment will be allowed in the competition area.

### **JUDGING CRITERIA:**

**Task 75%**

**Test 10%**

**Poster 15%**

**Total 100%.**

**ENTRY:**

Students must register online at: [www.dsbn.edu.on.ca/TechEd](http://www.dsbn.edu.on.ca/TechEd) with all of the required information completed to be eligible to participate. Teachers should forward a list of competitors participating from their school to the contest coordinator 5 days prior to the date of the contest.

**TRANSPORTATION:**

Students are responsible for their own transportation.

**TEACHER'S ROLE:**

Instructors are expected to acquaint their student participants with all of the enclosed guidelines. Teachers may accompany their students or visit any time during the competition, but may not assist the competitors during the challenge.

**SPECIAL INSTRUCTIONS OR GUIDELINES:**

Lunch ( pizza and pop) will be provided for all competitors at the competition. If your team has any special dietary requirements please notify the coordinator five days prior to the competition.

**COMPETITION AGENDA:**

**9:00 registration**

**9:15 challenges start**

**2:30 judging**

**all teams are required to leave the competition area by 3:45**