



## **Lego Robotics Challenge - Team of 4 - Grades 4-6**

**Date:** Thursday, February 5<sup>th</sup>  
**Location:** Lakeport Elementary Design Technology Center  
Lakeport Secondary School  
Room # 1

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

As part of the DSBN Technological Skills Competitions - Elementary Technology Competitions, schools are invited to showcase the talents of Grades 4 - 6 students in the Grade 4-6 Lego Robotics Challenge. The format for this year's competition will be a robotics challenge using Robolab/Mind storms Lego robotics and software. Teams of four students from schools across DSBN will have an opportunity to compete with one another in a friendly environment, demonstrating their creative, collaborative and problem-solving skills in solving an open-ended challenge. The theme for this year's Robotics Challenge is "Technology and The Work Place". It will consist of designing, constructing, and programming an autonomous Lego robot to accomplish specific tasks. Teams will be required to complete a skill testing quiz on Robotics and their uses, as well as design a poster to promote their team and the event. Teams should come to the competition with their Robolab kits, ready to construct and program their robot to solve the challenge. **Teams are permitted to bring an assembled drive train. Drive trains should be controllable, sturdy and have room for additional parts and sensors to be added.** The tasks and conditions of the challenge will remain hidden until competition day.

Time will be provided before each event to set-up, test, and make adjustments to each team's robot on the competition playing surface.

### **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 criteria. Overall team scores 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 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, and
- 8 organize and present an informative solution to the challenge

## **EQUIPMENT AND MATERIALS:**

### Supplied by Committee:

The following materials will be provided at the contest site

- 1 A competition playing surface will be provided for official competition
- 2 PC Windows (Windows XP) computers will be provided with both Robolab and Mind storms software installed
- 3 Pencil Crayons and Paper for the Poster Competition

### Supplied by Competitor:

Teams are required to bring, and should be familiar with the use of the following systems, processes, and resources:

- 1 Competitors who prefer to bring their own computers to the competition are welcome to do so
- 2 Lego Robolab or Mind Storms kit (NXT)\* including;
  - a. software suitable for Windows XP,
  - b. batteries,
  - c. Lego parts
  - d. at least three (3) motors
  - e. and 1 light sensor
- 3 Lego Robolab or Mind storms construction and programming manuals
- 4 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

- Lego Mind Storm Kit NXT #88527 \$350.00
- and Lego Mind Storms NXT Software #79258 (Single) #51.00
- or Robolab set with USB #9786 \$205.00
- and Robolab 2.5.4 software 600621 \$85.50

Note: if your team does not have a kit please call your local technology center, they may have one to loan you ( Including the new NXT Kits)

## **COMPETITION AGENDA:**

Feb. 5, 2009

### **TIME TABLE**

8:30 a.m.	REGISTRATION
9:00 a.m.	ORIENTATION
9:15 a.m.	CHALLENGE BEGINS

12:00 p.m.	LUNCH
1:00 p.m.	TESTS DUE
1:30 p.m.	POSTER JUDGING
2:30 p.m.	ROBOTICS COMPETITION
3:30 p.m.	AWARDS PRESENTATION

**JUDGING CRITERIA:**

Task 75%  
Test 10%  
Poster 15%  
Total 100%

**SAFETY:**

Safety is a priority at the DSBN Technological Skills Competition. At the discretion of the judges and technical chair any competitor can be removed from the competition site for not having the proper safety equipment and/or not acting in a safe manner.

**CLOTHING REQUIREMENTS:**

Competitors are to be dressed in a clean and appropriate manner.

**Contest Location:**

**Lakeport Elementary Design Technology Center  
Room # 1  
Lakeport Secondary School  
535 Lake Street  
St. Catharines On.**

Questions Please Contact

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