



2010 Lego Robotics Challenge - Team of 4 - Grades 4-6

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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 "Winter Olympics". 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 to assess technological problem solving, and knowledge of programming/software. 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.

EVENT DETAILS:

There will be 3 Preliminary events for the 4-6 robotics competitions. They will be held in the following locations alongside the Grade 7-8 competitions. Team may register for 1 of the following:

Weds, Jan 27 at Grimsby SS
Thurs, Jan 28 at Stamford SS
Fri, Jan 29 at West Park SS

Top 3 teams from each prelim will advance to board showcase/finals at Brock U on the a.m. of Feb 24, 2010

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
- 3 Pencil Crayons and Paper for the Poster Competition
- 4 (Extension cord is suggested as well)

Supplied by Competitor:

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

- 1 Laptop (or desktop) computers will be required with appropriate Mind storms software installed
- 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
- 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) \$91.00

Note: Each school was provided with one kit and software in Spring 2009. 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:

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%

ENTRY:

Elementary and Intermediate students must be registered online at:

www.dsbn.org/TechEd/skills_challenge.html

with accurate student information to be eligible to participate. Teachers should also forward a list of competitors participating from their school to the contest Chair 7 days prior to the date of the contest.

NOTE: An issue in past years has been collecting all the required information to complete the online registrations. There is a sheet that you can print off and send home with students to help you with this task at. If there is information that you do not have ready access to, please complete all fields possible. A bare minimum of 1. Names, 2. Team Names, 3. School Names, 4. Grade Level, 5. Teacher Name are absolutely required even for preliminaries. These areas should show up in **yellow** on the online registration form (may be browser dependent).

Most importantly, the registration process will generate a link to the [Parent Consent and Release Form](#) that MUST be printed and signed by parents/guardians and collected. Events are photographed and these photographs can be, and often are used for “good news” publication. The signed forms are to be faxed to the DSBN Skills Development Coordinator at 905-227-4731

Spaces are limited and will be awarded on a first come first served basis.

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.

Questions Please Contact

Leonard Aylward (Lakeport and Niagara District Technology Centre)

Sean Hanna (DRRC)