



DSBN **Elementary 7-8 Robolab Robotics CHALLENGE 2010**

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PURPOSE OF THE CONTEST:

Teams of four students each from schools across the DSBN 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:

There will be 3 Preliminary events for the 7-8 robotics competitions. They will be held in the following locations. 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 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:

- 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, and
- 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. A competition playing surface will be provided for official competition. No other equipment will be allowed in the competition area
2. Copies of **Robolab 2.5.4 and NXT software** will be available at the contest site
3. Contest description including poster contest and robotics test
4. Rubrics for each component of the competition
5. Markers, pencil crayons, rulers and paper will be provided for the poster competition
6. A limited number of spare parts will be available

Equipment Supplied by the Competitor:

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

1. Lego Robolab or NXT kit, including software suitable for Windows XP, batteries, Lego parts, etc. Kits should include at least three (3) motors and 1 light sensor.
2. Lego Robolab or Mindstorms construction and programming manuals, etc.
3. USB storage devices to make backups of your programming solutions
4. Extra sensors or motors might be required depending on the team's approach to the challenge
5. Computer (preferably laptop) for programming. (Teams must supply their own, if your school does not have 1 available please contact Media Services)

Note: if your school does not have a NXT kit available, but you would like to use one please contact your Design Technology Center

CLOTHING REQUIREMENTS:

Students are to dress respectably. If DSBN Technology T-Shirts have been received, they should be worn at the Brock Univ showcase/finals.

PROJECT AND COMPETITION EXPECTATIONS

The theme for this year's Robotics Challenge is "The 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 on Robotics and its concepts, and design a hand drawn poster to promote their team and the event.

Teams must come to the competition with their NXT kits, ready to construct and program their robot to solve the challenge. Teams are required 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.

JUDGING CRITERIA:

Task 75%

Test 10%

Poster 15%

Total 100%

ENTRY:

Elementary and Intermediate students must be registered online at:

www.dsbns.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 are marked in **yellow** on the online registration form.

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.

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.

COMPETITION AGENDA:

8:30am Registration

9:00am Challenge

2:30pm Judging