



DSBN REGIONAL GRADE 7/8 TECHKNOWLEDGE CHALLENGE 2010 ELEMENTARY LEVEL SCOPE

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PURPOSE OF THE CONTEST:

In preparation for the upcoming gold medal game between Canada and the USA the Canadian goaltender has to get in some extra practice time on shoot-outs, in case the game is tied at the end of regulation play. Our goalie would like to brush up on reaction time and needs someone to come into the rink and shoot pucks at them repeatedly at different spots on the net. The other players on the team are far too exhausted from beating the Russians the day before and cannot come to this practice.

Your firm has been hired by the Canadian Olympic Association to design and build a simple machine that shoots hockey pucks at the goaltender. Your design and engineering team must submit a proposal, complete with a working prototype, design sketches and written documentation to The Canadian Olympic Team.

Your prototype should be able to demonstrate its ability shoot fast and accurately to different locations within the net to simulate a real hockey player in a shoot out or game situation.

EVENT DETAILS:

Date: Monday, Feb. 22, 2010
Time: 9:00 - 3:30
Location: Fort Erie , Stamford, St. Catharines Collegiate, Lakeport, West Park, Grimsby, and E.L. Crossley D&T Centres

The top two finishers at each qualifying contest will compete in the DSBN finals at Brock University on Wednesday, Feb.24, 2010 from 1:00 - 3:00 for the right to represent DSBN at Skills Ontario.

SKILLS AND KNOWLEDGE TO BE TESTED:

Using a wide variety of materials provided on the day of the contest, co-ed teams of 4 students will design and build prototypes of their simple machine using the resources available at the D&T shop. These resources include computers, hand tools and power tools. The students will be judged on their ability to follow the “Design Process” to develop their prototype as well their ability to safely construct and demonstrate its effectiveness.

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: All necessary equipment for design and construction is supplied.

Equipment Supplied by the Competitor: Digital Camera

CLOTHING REQUIREMENTS:

Casual attire.

PRIOR KNOWLEDGE AND SKILLS

- Knowledge of the design process
- Functions of simple machines
- Use of gears and gearing to improve mechanical advantage
- Knowledge of Pneumatics and hydraulics

PROJECT AND COMPETITION EXPECTATIONS:

Using the materials provided you will be judged on how many pucks you get in the targets on the net in a given time frame.

No direct hand power is permitted for shooting the puck.

You may only use the materials provided. Be careful with the materials as you may not obtain replacement parts. You may use the material provided any way you wish.

JUDGING CRITERIA:

Judging criteria will be based on use of materials and accuracy in scoring on the net during the time allotted. One time out period of 2.5 minutes may be given for repairs at the judges discretion. The judging at the DSBN finals will include a poster style presentation for the judges showing the steps followed in the design process to achieve the final product. You should include all design sketches and photos.

JOB INTERVIEW COMPONENT:

Not applicable.

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 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.

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 should accompany their students to the competition, but may not assist the competitors during the challenge.

SPECIAL INSTRUCTIONS OR GUIDELINES:

Additional details may be provided on the day of the challenge.

COMPETITION AGENDA:

Arrival: 8:30 am
Competition start: 9:00
Competition end: 2:30
Judging: 2:30 - 3:00

Lunch and refreshments will be provided for students and staff. If any students have special dietary requirements please inform the D&T teacher at the competition site in advance of the competition.