The Cardboard Soap Box Derby 2011 - 2012

Skills Canada – Ontario
100 Campbell Ave. Suite 11
Ph: (519) 749-9899
Fax: (519) 749-6322

Web: www.skillsontario.com

Soap Box Derby

Skills Canada – Ontario would like to invite your school to participate in one of our first annual Cardboard Soap Box Derbys for elementary and high schools being held during the 2011-2012 school year at the following locations:

- Tuesday February 28, Kingston ON
- Thursday March 8, Waterloo ON

The registration fee is $80.00 per team for affiliated schools.

CHALLENGE OVERVIEW:

Teams of four students from the same school will design and construct a soap box derby car. The cars will participate in speed, distance and agility challenges on a race track. Cars will be propelled by the gravity generated from a ramp.

Students will construct a skeleton car at their schools – but will build and decorate the cardboard shell at the event within the allotted 1.5 hour construction time. Drawings of car designs will be submitted for judging. Drawing should include both the skeleton and the shell.

In addition to their performance in the challenges, teams will be judged on quality of construction, planning and design, teamwork and team spirit, safety and cleanliness and visual appeal. Please refer to the judging sheet for the scoring breakdown (pp. 5 – 6).

Please note that elementary and high school teams will be competing against each other at the same Derby.

TEACHERS:

Teachers (advisors) are not to provide advice to their students on the day of the event except to advise them of safety concerns. This challenge is designed to test problem solving skills and involves a broad base of curriculum.

ELIGIBILITY:

- Affiliated elementary and high schools may enter up to two (2) teams of four (4) students each.
- Please note registration is on a first-come, first-served.
- Teams must be made up of students from the same school.

REGISTRATION PROCESS:

- Step #1 – Teachers reserve team space(s) online at https://register.skillsontario.com. This must be done a minimum of **two (2) weeks** prior to the event.
- Step #2 – Teachers or students register team members by name online a minimum **one (1) week** prior to the event.
- Step #3 – Fax individual team member signed consent forms to (519) 749-6322 at least **one (1) week** prior to the event.

  ****NOTE:** Registration will not be considered complete until Skills Canada – Ontario receives a completed and signed copy of "SKILLS CANADA – ONTARIO PARTICIPANT CONDITIONS FOR 2011-12 PROGRAMS AND COMPETITIONS" form for each individual team member. **Students will not be permitted to participate if their form has not been received.**

  Cancellations must be received no later than one week prior to the event to avoid being charged full registration fees.

All invoicing will be processed following the competition.

Preparation for the Race

All teams are required to build and bring a skeleton car to the event.

SKELETON CAR CONSTRUCTION RULES AND REGULATIONS

1. Cars must…
    a. Be able to withstand speeds in excess of 20 km/hour.
    b. Be able to turn/maneuver. Steering wheels must not have any protrusions such as with a T-bar style that could pose a hazard in a collision.
    c. Run on four **NON-MARKING** wheels - two front and two rear. All four wheels must touch the ground at all times when racing.
    d. Be designed so that all propulsion comes from the gravity created by the starting ramp.
    e. Be designed so that feet are foremost when driver is in racing position.
    f. Have a headrest capable of restraining any sudden backward movement of the head.
    g. Meet the mandatory official dimensions (below) or they will not be allowed to race.
2. Brakes are recommended – but not required
3. No car shall display advertising or sponsorship except the name of the school or school board.
4. Cars can be made from wood, metal, plastic, rope and/or rubber in any combination however the skeleton must be designed so that there are no protrusions.

MANDATORY CAR DIMENSIONS

All cars must conform to these mandatory dimensions in order to fit on the ramp properly.

A. Outside edge of wheel to outside wheel edge (same axle)
    - 95 cm maximum

B. Ground clearance
    - 15 cm minimum

C. Overhang front and rear
    - 30 cm maximum

D. Tip of nose to rear axel
    - 190 cm maximum

THE DAY OF THE EVENT

All teams are required to build and decorate the cardboard shell for their cars on the day of the event within the rules listed below.

CAR SHELL
CONSTRUCTION RULES AND REGULATIONS

1. Each team must bring ***TWO COPIES*** of their car design sketch. One copy is to be submitted for evaluation at the time of arrival and registration. The second copy can be used by the team during construction and decoration of the shell.
2. Drawing should include both the skeleton and the shell.
3. Teams are permitted to bring materials with which to decorate their car. Spray paints and the use of aerosol cans, confetti and glitter[1] are strictly prohibited.
4. Teams are not permitted to use aids such as a prototype, to-scale patterns or prefabricated materials for tracing purposes.
5. An adhesive sheet with specified team number must be attached in a **visible** location on the car.
6. Teams are allowed to use handheld staple guns during one hour of construction time. Team members must be actively supervised by their teacher/chaperone when using the staple gun and all team members must be wearing protective eyewear. Teams who are using their staple gun unsafely will have the tool confiscated.

Tools and Materials Used at the Event:

Supplied by Skills Canada – Ontario:

1. Two 4' x 8' sheets of ¼" corrugated cardboard
2. Two 48 mm x 27.4m rolls of duct tape
3. An adhesive sheet with specified car number

Supplied by teams:

1. Straight edges/rulers of any length or size
2. Tape measures
3. Hand cutting devices
4. Paint, paintbrush, paint rollers, pencils, pens, markers
5. Decorations to enhance the appearance
6. Completed car design sketch
7. CSA certified eye protection
8. CSA certified helmet (Required for driver/pilot only)
9. Elbow and wrist pads (Required for driver/pilot only)
10. Optional: staple gun
11. Optional: small hand tools such as a screwdriver, pliers, hex (Allen) keys, wrench

Please note that teams will not be permitted to use power tools or hand saws during the actual event.

[1] Paints with glitter already added are permitted

Speed, Distance and Agility Challenge Rules and Regulations
Total Points 75

All Challenges

1. All challenges will take place on a course.
2. Cars will compete one or two at a time in all challenges.
3. *Pilots must wear properly fitting CSA helmets (bike or better) and wrist and elbow pads*.
4. Team members can take turns piloting the car during the different challenges. The same pilot can, but need not be used for all challenges.
5. Pilots must be properly seated in a feet first position.
6. All propulsion must come from the gravity generated by the ramp.
7. Teams are able to do minimal maintenance between challenges.
8. *Cars may not be allowed to compete in all or particular challenges, if the judging team feels that the car cannot be operated safely*.

Speed Challenge (worth 25 points)

1. Teams will be timed from the race "Go" until they cross a finish line marked on the floor.
2. If the pilot accidentally falls out before the finish line, no time will be recorded.
3. Points will be awarded for the ten (10) fastest overall times.

Distance Challenge (worth 25 points)

1. The distance from the bottom of the ramp to the resting place of the car will be measured.
2. If the pilot accidentally falls out of the car, the distance to the site of the fall, not the resting place of the car, will be measured.
3. The top ten (10) longest glides will be awarded points.

Agility Challenge (worth 25 points)

1. Cars will have to maneuver through a series of pylon gates arranged at the bottom of the ramp.
2. Each gate that the car passes through will result in 5 points being awarded.
3. If a car misses a gate entirely or knocks the pylon(s), no points will be awarded for that gate.
4. Gates need to be completed in the designated order. However if early gates are accidentally missed, passing through subsequent gates can still result in points.

SCHEDULE OF THE DAY

TIME	DESCRIPTION
9:30 a.m. – 9:45 a.m.	Arrival and Sign-in
9:45 a.m. – 10:00 a.m.	Welcome and Orientation
10:00 a.m. – 11:30 a.m.	Shell Construction and Decoration
11:30 a.m. – 12:15 p.m.	Clean up and Lunch
12:15 p.m. – 2:00 p.m.	Speed, Distance and Agility Challenges
2:00 p.m. – 2:15 p.m.	Results Tabulation and Evaluation Collection
2:15 p.m. – 2:30 p.m.	Awards Presentation

Scoring

QUALITY OF CONSTRUCTION: TOTAL POINTS 5

PLANNING AND DESIGN: TOTAL POINTS 5

TEAMWORK AND TEAM SPIRIT: TOTAL POINTS 5

SAFETY AND CLEANLINESS: TOTAL POINTS 5

VISUAL APPEAL: TOTAL POINTS 5

SPEED CHALLENGE: TOTAL POINTS 25

- Points awarded for ten (10) fastest times overall as follows:

1st – 25 points	6th – 15 points
2nd – 23 points	7th – 14 points
3rd – 21 points	8th – 13 points
4th – 19 points	9th – 12 points
5th – 17 points	10th – 11 points

DISTANCE CHALLENGE: TOTAL POINTS 25

- Points awarded for the ten (10) furthest distances as follows:

1st – 25 points	6th – 15 points
2nd – 23 points	7th – 14 points
3rd – 21 points	8th – 13 points
4th – 19 points	9th – 12 points
5th – 17 points	10th – 11 points

AGILITY CHALLENGE: TOTAL POINTS 25

- Points awarded for each gate passed.

Number of Gates Passed Through	Points
1	5
2	10
3	15
4	20
5	25

TIE BREAKER:

- In the event of a tie between two or more teams, the score from the speed challenge will be used as the tie breaker. If the score continues to be tied, the score from the distance challenge will be used as the tie breaker.

ON THE DAY:

1. Ensure teams have packed their own straight edges, tape measures, cutting devices, pencils/pens and decorations etc.
2. Two pieces of pizza (or boxed lunch) and drinks will be provided to team members and teachers (advisors) at lunch time. If participants feel they require additional sustenance, it is highly recommended they bring their own snacks with them. Any food brought to the venue must be nut free.

Photo Waivers

Camera crews and media will be onsite at the race taking footage and photos of the event. Students who do not have their parent's/guardian's permission to be photographed will be asked to wear a wrist band. The water proof wrist band will help ensure students without a signed photograph waiver won't appear in publications or get posted on social media and/or our website.

Questions

If you have any further questions please consult the contact Emily Waldron, Cardboard Events Coordinator at 1-888-228-5446 extension 221 or by email at emilyw@skillcanada.com.

Inclement Weather

Cardboard Programming will be cancelled only under the following conditions:

- The School Board(s) where the event is being hosted have "Closed" for the day
- And/or critical staff cannot safely travel to the hosting location

The event will continue as planned if 'buses are cancelled'.
If the cardboard event must be cancelled due to weather conditions, Skills Canada – Ontario will make every reasonable attempt to reschedule within the same school year. Unfortunately no refunds can be made to participant fees in the event of a last minute cancellation due to weather conditions.