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## 2012 Peel Region Science Fair

Louise Arbour S.S.

April 14 & 15



Peel Region  
Science Fair

# 2012 PEEL REGION SCIENCE FAIR STUDENT REGISTRATION GUIDE

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ENGAGING AND SUPPORTING YOUNG SCIENTISTS IN PEEL.

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### Registration

1. Register online ([www.peelscience.ca/](http://www.peelscience.ca/)) for each project. Registration opens on **Wednesday, February 1, 2012** and closes on **Sunday, April 1, 2012 – no registrations will be accepted after this date.**
2. Bring all signed permission forms to the Peel Region Science Fair on **Saturday, April 14, 2012**
  - Review and sign the “Safety Checklist”
  - Print, review and sign the “Participant Signature Page” for each participant upon completion of the online registration

#### NOTE:

Neither the committee, nor Louise Arbour S.S., is responsible for damage to exhibits or for valuables lost or stolen during the fair.

The exhibit hall will be locked after the judging on Saturday, April 14, 2012.

Students are to keep the project area clean and tidy and proper conduct is expected from all participants during this event.

Supervision by the organizing committee will be limited to the exhibit hall; adult accompaniment for each participant is still required.

Please contact Anthony Corvinelli ([Anthony.corvinelli@dpcdsb.org](mailto:Anthony.corvinelli@dpcdsb.org)) for any questions regarding online registration.



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### Rules and Regulations

1. The Fair is open to students who are registered in a Peel Region School (or homeschooled in Peel Region), in grade 7 to 12. Each project may have a maximum of two students.
2. All sections of the online registration must be completed by the student(s) and signed accordingly.
3. It is essential that the student(s) and supervisor read the Safety Regulations and then complete the safety checklist to ensure that the project will not be disqualified.
4. A safety checklist is required. Include this information with your project board.
5. The date of the set-up and judging is **Saturday, April 14, 2012** at Louise Arbour Secondary School, in Brampton. Transportation to and from the fair is your responsibility. Please make prior arrangements.
6. Set-up projects on **Saturday, April 14, 2012** (9:00 am - 12:00 pm)
7. Supervision for the participant at the fair is the responsibility of the parents, guardians, or teachers of the student.
8. Make arrangements for lunch (12:00 - 2:00pm).
9. Judging is from 2:00 - 5:00 pm and participants must stay with their projects the entire time. Bring something quiet to work on between judging.
10. Only judges are permitted in the exhibit hall **Saturday, April 14, 2012** (2:00 - 5:00 pm) during judging. Students are dismissed upon the completion of judging.
11. Please provide the name of a teacher who can be a judge at the science fair.
12. The use of cell phones or other communications equipment during the judging process is prohibited.
13. The Awards Ceremony will occur **Sunday, April 15, 2012**. The exhibit hall is open for **public viewing between 1:00 - 2:00 pm**.
14. Project removal by the participants occurs immediately after the awards ceremony.
15. Students selected to represent Peel at the Canada-Wide Science Fair will travel to **Charlottetown, PEI** (May 12-19, 2012). An initial meeting will occur after the awards ceremony.



DISPLAY WITH PROJECT

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### SAFETY CHECKLIST

#### Directions:

Students must review the following safety checklist when completing the registration form. Signing the registration form implies that the project will meet all of these requirements. Projects that do not adhere to the safety requirements will be eliminated from competition. **Check off each item that applies to you and submit the completed form along with the 1-page project summary** on arrival at the fair.

#### Safety Requirements

- The backboard is sturdy and self-supporting
- Exhibit is  $\leq 3.5$  m high X 1.2 m wide X 0.8 m deep
- No loose material hangs from the exhibit or display table.
- All unsafe or moving parts are enclosed or protected.
- Pressurized containers have safety valves.
- No open flame is on display.
- Electrical cords and devices are CSA-approved with grounding.
- Electrical connections are insulated and non-currents carrying metal parts are grounded.
- Lasers will not be operated during public display.
- Exposed electrical connections are  $\leq 36$  Volts to ground and no voltages exceed 10,000 Volts.
- Flammable or poisonous materials are simulated.
- No biological toxins are on display.
- Living organisms are not being displayed.
- Work with recombinant DNA or animal viruses was carried out under qualified supervision (provide evidence).
- Use of vertebrate animals, including humans, conforms to local, provincial, and federal laws, and the regulations outlined by the Youth Science Foundation Canada, posted at <http://www.ySF-fsj.ca/Members/pdirectory4.aspx>

Student 1 Signature:

Student 2 Signature:



### Project Classification

#### Division

There are no more divisions in the Peel Region Science Fair. This corresponds with changes made to the Canada Wide Science Fair for 2011. All projects will be judged for medals against all others in their category.

#### Category

There are 3 categories of project based on the student's school grade. Junior (Grade 7 & 8), Intermediate (Grade 9 & 10) and Senior (Grade 11-12). For projects completed by two students, the category is that of the highest-grade member.

#### Type

There are 3 types of projects that help judges characterize the nature of the work: **Experiment**, **Innovation** and **Study**. All three types are equivalent, but differ somewhat in the way they are conducted and evaluated.

The following may help clarify the differences:

- **Experiment**  
Involves the testing of a specific hypothesis with the control of significant variables. Judging emphasis is on the experimental design and analysis of the data.
- **Innovation**  
Involves the development and evaluation of new devices, models, techniques or approaches, usually in technology, engineering or computers. Judging emphasis is on the design process, application of scientific and engineering principles or human benefit
- **Study**  
Involves the collection and analysis of data from sources other than the student's own work to reveal evidence of a fact, situation, or pattern. Judging emphasis is on insightful analysis.

Judges at the Science Fair will be looking at a combination of written information and the student presentation. Successful students will be able to demonstrate depth and breadth of knowledge for the scope of their project. The project should exhibit qualities of excellence and creativity.



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## Evaluation – Project Marking Sheet:

<b>SCIENTIFIC THOUGHT AND KNOWLEDGE (Value 60%)</b>	1 = Poor 5 = Average 10 = Excellent										
Is there a viable commercial application or significant human benefit?	1	2	3	4	5	6	7	8	9	10	Total
Does the student understand the scientific or engineering principles, laws, or theories related to the project at a level appropriate to the project?	1	2	3	4	5	6	7	8	9	10	
Is there a well-defined objective or purpose given for the project?	1	2	3	4	5	6	7	8	9	10	
Does the design of the investigation effectively address the problem identified?	1	2	3	4	5	6	7	8	9	10	
Does the student demonstrate refinement/improvement to the design?	1	2	3	4	5	6	7	8	9	10	
Are the significant variables recognised and controlled?	1	2	3	4	5	6	7	8	9	10	
Are observations clearly and logically organised?	1	2	3	4	5	6	7	8	9	10	
Did the student gather data from suitable sources?	1	2	3	4	5	6	7	8	9	10	
Has the student amassed an appropriate and relevant data sample?	1	2	3	4	5	6	7	8	9	10	
Is there strong evidence of a fact, situation or pattern of scientific interest?	1	2	3	4	5	6	7	8	9	10	
Is the conclusion valid based on the data collected?	1	2	3	4	5	6	7	8	9	10	
Does the student have clear ideas for further research or applications?	1	2	3	4	5	6	7	8	9	10	
<b>ORIGINALITY or CREATIVE ABILITY (Value 15%)</b>											
1 = Poor 5 = Average 10 = Excellent											
Does the project demonstrate originality at a level appropriate to the student?	1	2	3	4	5	6	7	8	9	10	Total
Does the project show resourcefulness and/or creativity in design?	1	2	3	4	5	6	7	8	9	10	
Does the investigation of the phenomenon or the design process, incorporate a novel approach?	1	2	3	4	5	6	7	8	9	10	
Is the data obtained, analysed or interpreted in an original way?	1	2	3	4	5	6	7	8	9	10	
<b>DISPLAY (Value 15%)</b>											
1 = Poor 5 = Average 10 = Excellent											
Does the display use a clear and logical approach to explaining itself?	1	2	3	4	5	6	7	8	9	10	Total
Does the exhibit make appropriate use of various media? (Equipment and gadgets that are simply decorative will be ignored and may be counted against the exhibit).	1	2	3	4	5	6	7	8	9	10	
Are charts, diagrams, graphs etc. used in a meaningful way, which supports the presentation?	1	2	3	4	5	6	7	8	9	10	
Does the exhibit demonstrate good workmanship? (I.e., Does everything work as it should?)	1	2	3	4	5	6	7	8	9	10	
<b>PRESENTATION (Value 10%)</b>											
1 = Poor 5 = Average 10 = Excellent											
Does the student communicate his/her knowledge and understanding?	1	2	3	4	5	6	7	8	9	10	Total
Does the student demonstrate that he/she has completed the project as independently as could be expected for his/her age/grade? (Adult guidance, advice, and supervision of hazardous work is appropriate, but excessive adult involvement counts against the exhibit).	1	2	3	4	5	6	7	8	9	10	



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### Overall Evaluation

	A. EXPERIMENT	B. INNOVATION	C. STUDY	Type
	An investigation undertaken to test a scientific hypothesis experimentally. The variables, if identified, are controlled to some extent	The development and evaluation of innovative devices, models or techniques or approaches in technology, engineering or computers (hardware or software).	A collection and analysis of data to reveal evidence of a fact or a situation of scientific interest. It could include a study of cause and effect or theoretical investigations of scientific data.	
				<b>Check</b>
Level 1	Duplicate a known experiment to confirm the hypothesis. The hypothesis is totally predictable.	Build models (devices) to duplicate existing technology.	Study existing printed material related to the basic issue.	
Level 2	Extend a known experiment through modification of procedures, data gathering, and application.	Make improvements to or demonstrate new applications for existing technological systems or equipment and justify them.	Study material collected through a compilation of existing data and through personal observations. Display attempts to address a specific issue.	
Level 3	Devise and carry out an original experiment. Identify and control some of the significant variables. Carry out an analysis using graphs or simple statistics.	Design and build innovative technology or provide adaptations to existing technology that will have human benefit and/or economic applications.	Carry out a study based on observations and literary research illustrating various options for dealing with a relevant issue. Include appropriate analysis (arithmetic, statistical, or graphical) of some significant variable(s).	
Level 4	Devise and carry out original experimental research, which attempts to control or investigate most significant variables. Include statistical analysis in the treatment of data.	Integrate several technologies, inventions or designs and construct an innovative technological system that will have human and/or commercial benefit.	Correlate information from a variety of significant sources, which may illustrate cause and effect or original solutions to current problems through synthesis. Identify significant variable(s) with an in-depth statistical analysis of data.	



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### Schedules of Events

#### **Saturday, April 14, 2012**

9:00 am - 12:00 pm: Students arrive to set up their projects

9:00 am - 12:00 pm: Safety checks / Pictures

12:00 - 1:00 pm: Judges preview - **No Students at their exhibits**

12:00 - 2:00pm: Students & parents leave for lunch

1:00 - 2:00 pm: Judges lunch & briefing

2:00 - 5:00 pm: Judging - All Students at their projects

NOTE: Special awards judges: Companies providing special awards to student projects will list all eligible projects at the science fair. Winners from the list will be determined from overall rankings.

#### **Sunday, April 15, 2012**

1:00 - 2:00 pm: Public viewing – all students at projects

2:15 - 3:45 pm: Awards ceremony (Dress appropriately)

3:45-4:15 pm: Students take their projects home

#### **Sunday, April 15, 2012 @ 4:30 pm**

Canada Wide Science Fair Team Meeting / Registration



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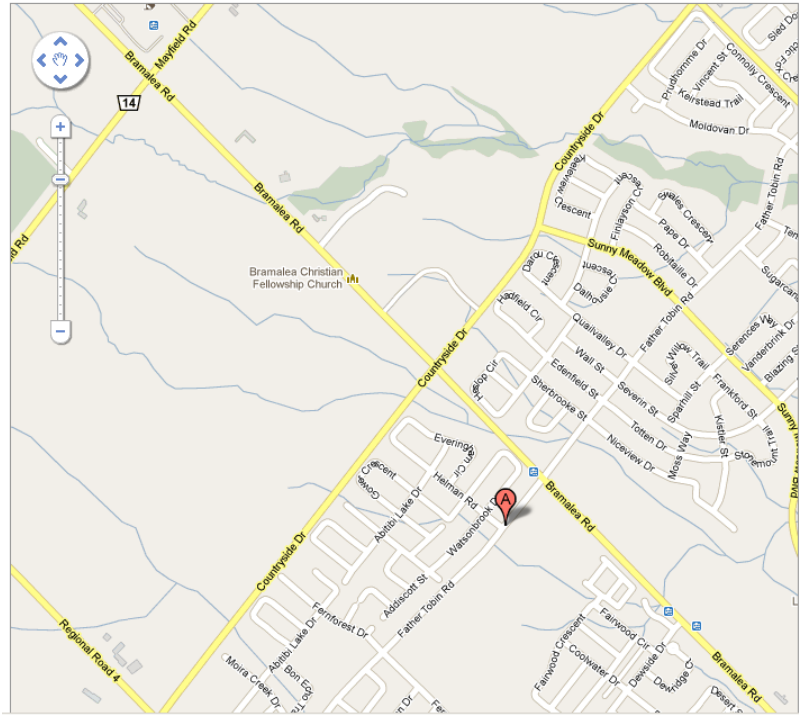
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### Louise Arbour S.S.

#### Directions:



\* Louise Arbour S.S. is West of the Bramalea Rd between Countryside Dr and Sandalwood Pkwy E (410 & Sandalwood area).

#### Address:

365 Father Tobin Rd, Brampton, ON L6R 0R4