Frontenac, Lennox and Addington
Science Fair

Science Fair Project Preparation Package 2020

Please visit the FLASF website for dates, times and up-to-date information about the Fair.

www.flasf.on.ca

Teachers and Parents are invited to bring students not participating as presenters to the Day Two of Fair for public viewing and workshops beginning at 9:50 am. Classes are invited to stay for the special presentation and Awards Ceremony beginning after lunch.

**** Please contact outreach@flasf.on.ca to register for Day of Fair workshops or have FLASF visit your class to provide information or assistance in preparing for the Fair.**

FLASF 2020 Calendar of Events

Please Read Carefully and Note Important Changes from Previous Years

January 1, 2020	**Online registration commences.** ALL registrations will be done online through the web site at http://www.flasf.on.ca
March 6, 2020 at 5 pm	**Online registration deadline for ALL grades**. *Note that although the pre-fair report must be submitted by this deadline, it is understood and expected that the project may not be completed at the time of submission. Should this be the case, please indicate in the results section that the results are pending.* **Signed permission form and registration fee ($15) must be mailed or delivered and received to the address below by this date**. Frontenac, Lennox and Addington Science Fair Suite #164, 427 Princess Street Kingston, ON, K7L 5S9 - **Please make cheques payable to FLASF** or pay online - Teachers may submit permission forms and fees for all participants in their class as a single package provided they are entered by the deadline. - **These dates are firm**. Those who miss the deadlines will be put on a waiting list to participate in the science fair at the discretion of FLASF. Please contact registrar at students@flasf.on.ca.
Thursday, March 26, 2020	**FLASF at Faculty of Education, Queen's University**
4:00 pm – 5:30 pm	-Registration and Safety Check
6:00 pm – 9:00 pm	-Judging – all participants must be present
Friday, March 27, 2020	**FLASF at Faculty of Education, Queen's University**
9:00 am – 10:00 am	-Grade 5/6 - Science Presentation; Grades 7 to 12 - Judging;
10:00 am –12:00 pm	- PUBLIC VIEWING, WORKSHOPS & Special Awards Judging
12:00 pm- 12:30 pm	-Lunch
12:30 pm – 3:00 pm	- Science Presentation and Awards Ceremony
3:00 pm	-Take-down of projects and students pick up

***The above times are approximate. Please check www.flasf.on.ca for exact times.*

Notes:

- The student must be with his or her project for it to be judged.
- If the project requires electricity, the student must bring an extension cord of length 6 to 8 meters. Please ensure the electricity requirement is stated in the registration.
- Food and beverages will be for sale during dinner and lunch. The facility is NOT PEANUT-FREE.

Questions:

(a) About Ethics (Animal and Human testing) contact: ethics@flasf.on.ca
(b) About Safety requirements for you project display contact: safety@flasf.on.ca
(c) About registration contact: students@flasf.on.ca
(d) About other matters contact: chair@flasf.on.ca
(e) Want to have FLASF Outreach visit your class contact: classvisits@flasf.on.ca

Updates: For updates, please check the FLASF web site at http://www.flasf.on.ca

Classification of Projects

Levels	Grade 5-6	Primary
	Grade 7-8	Junior
	Grade 9-10	Intermediate
	Grade 11-12	Senior

Types of Projects

Experiment

A project of this nature involves an original scientific experiment to test a specific hypothesis in which the student recognizes and controls all significant competing variables and demonstrates collection, analysis, and presentation of data.

Study

A study includes 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 relationships involving ecological, social, political or economic considerations or theoretical investigations of scientific data.

Innovation

Innovation projects involve the development and evaluation of new devices, models, techniques or approaches in fields such as technology, engineering, or computers (both hardware and software).

Categories of Projects

Human Health Science

A health sciences project examines some biomedical and/or clinical aspect of human life or lifestyle and its translation into improved health for humans, or more effective health services and products. Projects related to the health of specific populations, societal, cultural and lifestyle dimensions of health, and environmental influences on health are also included in this division.

Health sciences projects include those related to human aging, genetics, cancer research, musculoskeletal health, arthritis, circulatory and respiratory health, nutrition, neurosciences, mental health, psychology, metabolism, human development, infection and immunology. In addition, projects involving animal research that have a direct application to human health are included in this division.

Projects involving research on humans demand careful planning and must comply with Youth Science Canada regulations. Please review the information provided under Ethics and Safety at http://www.flasf.on.ca and contact the ethics coordinator at ethics@flasf.on.ca explaining your proposed project to ensure that it will meet requirements.

Life and Earth Sciences (non-human)

A Life Science project examines some aspect of the life or lifestyle of an organism, which encompasses all types of non-human life such as plants, animals, birds, fish and insects. Life Science includes botany, zoology and entomology. It also includes crop development projects pertaining to agriculture, horticulture or silviculture (forestry); animal science projects pertaining to animals involved in agriculture and aquaculture; and microbial projects pertaining to affect of microbes on productivity in agriculture, horticulture and forestry or their use in industrial processes.

An Earth Science project focuses on topics relating to planetary processes, the relationships of organisms to those processes, and the relationships among organisms. Projects will fall into the following fields of study: geology, mineralogy, physiography, oceanography, limnology, climatology, seismology, geography, and ecology. Earth science includes environmental science. It can involve the study of pollution (air, water, and land). Studies dealing with resource management or sustainable development would fall into this category.

Projects involving animals (vertebrates) demand careful planning and must comply with Youth Science Canada regulations. Please review the information provided under Ethics and Safety at http://www.flasf.on.ca and contact the ethics coordinator at ethics@flasf.on.ca explaining your proposed project to ensure that it will meet requirements.

Physical and Mathematical Science

A Physical Science project studies an abiotic (non-biological) phenomenon in order to understand the relation of identified factors, perhaps including a cause and effect relationship, in fields such as physics, chemistry and astronomy. Comparison testing of projects, as it is descriptive, would be included.

A Mathematical Science project seeks to demonstrate an application of mathematics or to solve a theoretical problem. The problem provides a context for the exploration of pattern and the search for a mathematical model. Some areas of investigation in this category include algorithm development (a mathematical model to describe a phenomenon or event), operational research (application of mathematical science to solve planning or operational problems), and statistics. A project highlighting a breakthrough technique that uses the computer to accomplish this task also falls in this category.

Engineering and Computer Science

An Engineering project applies physical science knowledge to solve a problem or achieve a purpose. These projects investigate the utility of innovations and inventions and can focus on a new process or on a new product. Although a complete engineering project will include an outline of the need, the development of the innovation and some work on introducing the innovation to the community, many projects focus on just the development phase.

A Computing Science project deals with computing, mathematical models, innovative software and hardware design. Computing sciences projects are applied science and technology projects that concentrate on the development of computer equipment or programs. They focus mainly on computers, their languages, their software, databases and their functions. Projects that store and handle data should be entered in their data-specific division.

The Pre-Fair Report

The pre-fair report (a brief description of the main points of the project) must be submitted on-line with the registration form and safety checklist. Please keep the description brief – a detailed report describing the entire project can be included with the exhibit at the science fair.

The pre-fair report will provide the judges with summary information about the project. Judges will review the report before the fair and will therefore be better prepared to ask questions during the oral presentation. A sample pre-fair report is available on-line at http://www.flasf.on.ca.

Note that although the pre-fair report must be submitted at the same time as the on-line registration, it is understood and accepted that the project may not be completed at the time of submission. Should this be the case, please indicate in the results section that the results are pending.

Eligibility to Participate

Students in schools located in the counties of Frontenac, Lennox and Addington are eligible to participate in the Frontenac, Lennox & Addington Science Fair (FLASF). Entries will be accepted from students in Grades 5 to 12 who are younger than twenty-one (21) years of age as of June 30th of the year of the science fair.

To be eligible, the on-line application form, together with the necessary declarations, a science fair fee of $15.00 and the pre-fair report, must be submitted before the deadline set by the Science Fair Committee. An exhibit must be set up by a date and time that is specified by the Committee and must be left on exhibit until after the awards ceremony. The committee reserves the right to reject unsuitable projects.

A project that has been presented at a previous science fair is not eligible. However, a project may be re-entered into competition if it is demonstrated that the project has undergone substantial improvement that greatly increases the level of science presented.

In addition, to be eligible, projects must adhere to the regulations and policies set forth by Youth Science Canada. Suitable precautions must be taken to prevent the possibility of personal injury, property damage, and the legal action that could result from a lack of concern for safety and animal experimentation. The regulations relate to use of use of Firearms, Hazardous Materials and Equipment, Recombinant DNA and Biotechnology, Use of Animals and Participation of Humans.

Please visit the FLASF Website at http://www.flasf.on.ca for information.

Project Exhibits

Only one exhibit per student or pair of students may be entered. The exhibit must be designed and assembled entirely by the student although advice may be obtained from anyone, as long as the necessary acknowledgements have been included.

Your entire project display must be placed on a table (supplied by FLASF) and is restricted to a space of no more than **1.2 metres wide, 0.8 metres deep and 2.25 metres high** (measured from the table

top). Construction of the exhibits must be self-supporting, safe, durable and with moving parts firmly attached. An electrical outlet (110V) can be provided; however, the exhibitor must supply a CSA approved extension cord of at least 6 metres. Outlets for water, steam, compressed air or gas will not be available.

WIFI access is available in the exhibit hall but it is to be used only if it is necessary as part of your Science Fair Project. This access must be made as a special request when registering on-line.

Safety during the fair is important and your project presentation at the fair must meet specific safety requirements. Please visit the FLASF website at http://www.flasf.on.ca under the "Students" tab and click on "Safety" for detailed requirements. Students requiring clarification of these requirements should contact the safety coordinator at safety@flasf.on.ca as early as possible, explaining what they wish to do.

Care and operation of the exhibit is the responsibility of the exhibitor. While every effort will be made to prevent damage to an exhibit, neither the Frontenac, Lennox and Addington Science Fair Committee, nor the sponsoring organizations and co-operating groups assume responsibility for loss or damage to any exhibit or part of an exhibit.

Frequently Asked Questions

Registration

- **Can I register offline this year?**
  All registrations must be done on-line.

- **Can I send / mail / deliver a printed copy of the registration form?**
  All participants must register on-line.

- **I started to register online but my Pre-Fair Report is not ready yet. Can I still register?**
  Finish your Pre-Fair Report first. It does not matter if you register early as long as it is before the posted deadline.

- **Can I send / mail / deliver cash for the registration fee?**
  Please send only a cheque or a money order.

- **I don't have an email address for registration. What can I do?**
  (1) Obtain a free email address through Hotmail or Google (gmail)
  (2) Use a parent's email address
  (3) Use the school's email address
  (4) Use a science teacher's email address
  (5) Use a friend's email address

- **I did not indicate that I needed electricity when I registered, but now I need it. What do I do now?**
  Please email the Safety Coordinator at safety@flasf.on.ca indicating your name and project title. We will make every effort to arrange for electricity. It may not be possible to make changes after the registration period is over.

Judging

- **If I have a partner, do both of us have to be present for judging?**
  Both students should be present for a project to be judged. Please speak to a committee member for extenuating circumstances.

- **Can my parents answer questions while the judges are interviewing me?**
  No. In fact, it is recommended that parents not be present when the project is being judged.

Use of Animals / Human Testing

- **Can I use animals in my project?**
  Only by following the strict guidelines outlined in the CWSF policies and regulations. Please consult www.flasf.on.ca under the Rules and Regulations section. You must also submit a Request for Ethics Review by contacting the Ethics Coordinator at ethics@flasf.on.ca.

- **Do I need permission from anyone to do a survey involving people?**
  YES and CWSF policies and regulations apply. Please consult www.flasf.on.ca under the Information for Students, Ethics and Safety Sections. Rules & Regulations section for information on low and high risk projects involving humans. You must submit a Request for Ethics Review, available in the "Download Documents" section of the FLASF website to the Ethics Coordinator at ethics@flasf.on.ca BEFORE BEGINNING YOUR PROJECT. Once approved, you will need to prepare an information letter for participants and have each one sign a consent form. Samples of these forms are available on the FLASF website under "Download Documents."

- **Does 'no animals' in the Project Presentation Safety rules mean I cannot bring my snake for my project?**
  Regardless of their use in the project absolutely no animals / reptiles / fruit flies / living entities are allowed in the Fair's exhibition hall.

Other Issues

- **My project is bigger than I thought it would be. Can I have a second table?**
  No, projects cannot exceed a certain maximum size. Please plan ahead when creating your project.

- **Why can't I switch my project to a different table?**
  The organizing committee assigns specific judges to evaluate your project. If you are not at your assigned table when the judges appear, then your project may not be evaluated. The judges do not have time to look for you.

- **I have a hockey game at 7 pm on the first day of the fair. Can my partner talk to the judges on my behalf?**
  If you did a project with a partner, both of you must be present during all judging. Please make plans to be available during the entire Fair. Because of the organization involved in assigning judges specific times and projects, judging times will not be changed.

- **I won't be able to get a ride to the Fair until 7 pm on the first day of the fair. Is that too late?**
  Safety checks take place between 4 pm and 6 pm on the first day of the fair. Your project MUST pass the safety check before you can be judged. In addition if you have not registered on time, the judges who would have evaluated your project will be assigned to other projects. Please talk to your family and/or teacher beforehand to make arrangements to arrive on time.

Mandatory Project Components

Here is a list of the components that must be included for a project to be considered as an official science fair project:

- A research project in the form of a study, an experiment and/or an innovation.
- A pre-fair report summarizing the project (sample on website).
- A good title to attract the public's attention.
- A nice and attractive display with signs and props that effectively explain the project.
- A good oral presentation so that the student can share the project with the public and judges.
- A log to show all the steps of the project.
- A submitted on-line application form, registration fee and Pre-Fair Report by the posted deadline.

Project Checklist

	yes	no
RESEARCH AND REPORT		
I have stated my purpose simply and clearly.	❑	❑
I have given enough background information.	❑	❑
I have identified all my sources of information.	❑	❑
I have listed all the materials I used, and I have described them clearly.	❑	❑
I have outlined all the details of my procedure so that another person could repeat my project with the same results.	❑	❑
I have used various ways of displaying my results: neat log, charts, tables, graphs, pictures, diagrams.	❑	❑
I checked the accuracy of any calculations in my results.	❑	❑
My conclusion answers the question in my purpose.	❑	❑
My conclusion is supported by my results.	❑	❑
I have given possible applications of my results to everyday situations.	❑	❑
I have identified possible experiments or projects that arise from my results	❑	❑
I have acknowledged all the people who helped me with my project.	❑	❑
I have chosen a good title for my project.	❑	❑
BACKBOARD		
Items are laid out in an orderly fashion.	❑	❑
The size of the board suits the amount of material.	❑	❑
The board is within the given size restrictions.	❑	❑
The board is strong enough to stand alone.	❑	❑
Written material is typed.	❑	❑
I have used lots of colour.	❑	❑
Everything can be read while standing 1 or 2m away.	❑	❑
The titles are large and legible.	❑	❑
I can set up easily on my own at the exhibit hall.	❑	❑
I kept it simple.	❑	❑
ORAL		
I am completely familiar with the research work.	❑	❑
I am familiar with my results.	❑	❑
I am familiar with ways that the information I've gathered can be put to practical use.	❑	❑
I know what specific information is found in every part of my project.	❑	❑
I have practiced my presentation.	❑	❑
I have practiced my smiling power lately.	❑	❑

If the student answered YES to all these questions, then he or she is ready for the science fair.