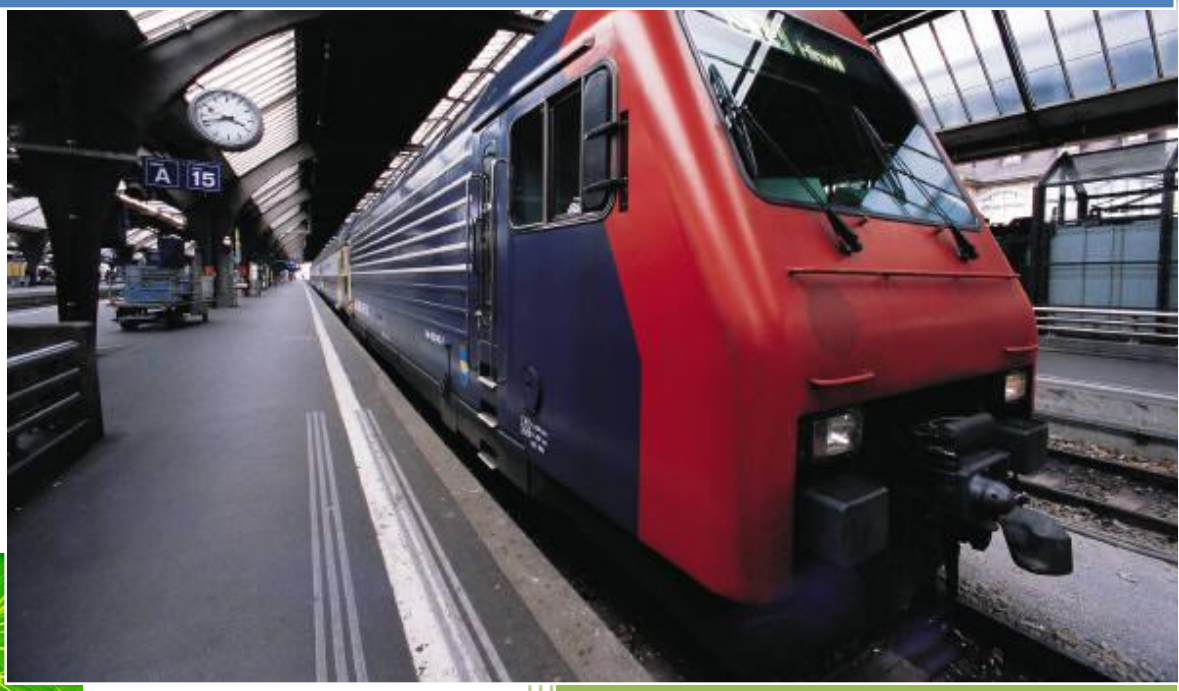
RENFREW COUNTY REGIONAL SCIENCE & TECHNOLOGY FAIR

2011

Eligibility, Project Rules, Regulations & Guidelines



A Deep River Science Academy® Program

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Approved by

This document supersedes all previous documents of the same title.

All projects will be checked as part of registering at the fair and those not meeting the regulations will need to be corrected before they are accepted for display and judging. The rules and guidelines listed below are based on those provided by YSF Canada for use at Regional Science Fairs and the Canada Wide Science Fair (CWSF). Some forms need to be completed before experimentation begins! We recommend that you print and complete the forms you will need as soon as possible.

All students must complete the RCRSTF on-line registration process, and submit a signed RCRSTF Release form. Detailed instructions for completing registration are provided at www.rcrsf.ca and follow the links for registration.

Grade 7 to 12 students are eligible for the CWSF and must complete any additional required YSF forms. To find out which forms you will need, check here.

Please be aware that you may only exhibit the project you registered, using the same Project Title! No substitutions of projects or students will be permitted.

Contents:

Eligibility

Renfrew County Regional Science & Technology Fair (RCRSTF) is open to all students in grades six to twelve under the age of twenty-one, who attend any public, separate, or private school, or who are home-schooled, in the County of Renfrew.

School Fairs: If your school conducts a school science fair, you may only advance to RCRSTF through your school's fair. If your school does not conduct a science fair, you

may enter into RCRSTF directly; your school official must still approve your participation.

Number of Entries: A student may not exhibit more than one project each year.

Team Projects: Projects developed by a maximum of two students may be entered and shall be entered in the division of the oldest member of the group.

Continuation or Duplicate Projects: An exhibitor may not present a project identical to a previous year's project at RCRSTF. An improved project may be entered again into competition, however only research completed since the last RCRSTF fair may be displayed. Any continuing research must document substantial expansion of investigation and students will be judged on the current year's work only. If you are entering a project which is a continuation of previous years work, you must complete a Continuation Projects Form, and submit it with your project registration.

Permissions: All release forms must be signed by a parent or guardian and a teacher or principal. Some Scientific Review forms require additional signatures.

Project Dimensions

All exhibits, including all accessories, must be confined to a table or floor space not to exceed 0.76 metres, front to back; 1.2 metres side to side; and 3 metres maximum height from the floor. All measurements will be made from the outermost points, including framework and appendages, and will be checked by the safety coordinator. Exhibits exceeding these dimensions must be modified or will not be accepted? Fair supplied tables will not exceed 91 cm in height.

General Safety

Safety of the public is a prime consideration. 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.

All sharp edges or corners on prisms, mirrors, enclosures, and glass and metal plates must be removed or otherwise protected. The length of hoses or extension cords is to be kept to a minimum and out of the way to eliminate tripping hazards. Use tape for securing.

Aisles and exits must not be obstructed.

Moving exhibits (e.g., radio-controlled vehicles, robots) should be restricted to the regulation display space. The committee will endeavour to provide an area to safely demonstrate to judges, projects that require more space than the regulated exhibit display space. Powered aircraft may not be activated.

Exhibits must be sturdy and self-supporting; adjacent walls may not be used for support. Moving parts must be firmly attached and approved for safety.

Glue all paper flat to the backboard, or tape all edges. Do not hang overlapping sheets on the backboard; put them in a binder.

One electrical outlet supplying AC110 volt 60 cycle will be supplied if requested. Each 15A circuit will be shared by several projects. Exhibitors should bring their own good quality (CSA approved) 3 prong extension cord, since outlets may not be adjacent to each projects display space. No gas or water outlets will be available. No cable or telephone circuits will be available. Switches and cords must be the approved variety. Cell or battery-fed circuits should be safe in design and operation.

Water will be available near the exhibit hall. Bring your own pail to carry it if needed. Your display must be confirmed as safe by the safety committee both before and after including the water. You must also demonstrate arrangements for removing and disposing of the water safely and without spillage.

The exhibitor must supply all equipment except display tables.

The exhibit must comply with all safety, animal care and ethical regulations as outlined below.

Fire Safety

The organizing committee will work with the Safety Coordinator of the fair to meet all requirements for safety and security, and to communicate those requirements as necessary to participants during the science fair. The organizing committee will establish an exhibit hall layout that satisfies the fairs requirements for fire safety and emergency evacuation purposes.

Certain restrictions have been defined for the construction of displays to reduce the possibility of accidental fire during the fair, and in the event of fire, to allow for safe evacuation of the building.

The committee will be responsible for ensuring that fire extinguishers of proper size and rating are available in the exhibition area.

The committee will establish a fire evacuation plan, and an exhibit hall layout that minimizes long rows in order to reduce flame spread.

All apparatus used to generate heat (hot plates, heat lamps, torches, candles, etc.), if displayed, must be rendered non-operable.

Chemical Safety

No containers of toxic or flammable chemicals are allowed.

Dangerous chemicals are not allowed - this includes prescription drugs, over-the-counter medication, kitchen and laundry supplies, tobacco products and by-products. Substitutes for toxic and corrosive chemicals must be used. Common salt, for example, can be used to simulate chemicals such as ammonium nitrate. Water may be used instead of alcohol, ether, and other highly flammable liquids. Molasses can be used to represent petroleum products. When chemicals are simulated, they should be labelled with the names of the substance they represent preceded by the word ?simulated? No project will be penalized because the key (but potentially dangerous) components were not on display.

If you are in doubt about any material, then use a substitute in your project display.

Electrical Safety

As low a voltage as possible must be used.

At the end of the day or the viewing period, all electrical exhibits must be disconnected, and power bars switched off. Power bars must have a switch for this purpose.

Only CSA-approved extension cords in good repair shall be used.

Where practical and necessary, it is recommended that pilot lights be used to indicate that the voltage is on.

Cord-connected electrical appliances shall have a 3-wire conductor with ground or be CSA-approved.

An insulating grommet is required at the point where the service enters any enclosure.

Electrical devices must be protectively enclosed as far as it is practical.

Any enclosure must be non-combustible. All non-current carrying metal parts must be grounded.

All lighting used for decoration or illumination must be CSA approved. Lamp wattage must not exceed ratings. Lighting must not pose risk of injury if touched.

No exposed live parts over 36 volts are allowed. Current (amperage) must be low so as not to cause any discomfort or danger if touched.

Wet cells shall not be used because of the hazardous chemicals involved.

Structural & Mechanical Safety

Exhibits must be of a safe design with adequate stability to keep from tipping.

Dangerous moving parts such as belts, gears, pulleys and propeller blades must be suitably guarded.

Pressurized vessels should have a safety valve.

Compressed gas cylinders are not allowed to be displayed. Small (table top) air or other fluid compressors may be displayed, but must be rendered inoperable for the duration of the fair. Associated pressure systems must be purged of any contents other than ordinary air, and must be open to the atmosphere, to ensure they are at room pressure. Pressure systems of any type are considered hazardous equipment. You must complete a Designated Supervisor form and it must be submitted with the project registration.

X-Ray or Radiation-producing Equipment

If an exhibit uses x-ray equipment or any other equipment capable of emitting high energy radiation, registration of ownership with the Ontario government is required.

Plans for structural protection must be submitted to the provincial government and approval requested.

A formally trained and qualified individual must be identified to exercise supervision of the operation and to take responsibility for safe performance. It will be an obligation of this individual to satisfy the Chief Inspector by exposure rate measurements or other suitable documentation that the operation is safe.

Projects involving voltages above 10 kV should be considered to pose a potential x-ray hazard.

Lasers and x-ray or radiation-producing equipment may not be operated during public viewing periods.

You must complete a Designated Supervisor form and it must be submitted with the project registration.

Firearms, Explosives and Hazardous Materials

YSF Canada and Regional Science Fairs allow students to conduct research involving hazardous equipment and firearms as long as students adhere to federal and provincial regulations and guidelines that are designed to protect the safety of the researchers.

Use of hazardous equipment, dangerous goods, explosives and firearms requires proper supervision by a Designated Supervisor. This Supervisor must be directly responsible for overseeing student experimentation. In some cases, the Designated Supervisor must possess a Firearms Possessions Certificate / Hunter Safety Certificate and/or a Canadian Firearms Safety Course equivalent, and be knowledgeable in the use of the firearms or devices that will be used in the experimentation. In all cases, the Designated Supervisor must be at least 18 years old. The Supervisor must provide proof at time of project Registration of his/her licensing and expertise in the use of a firearm, volatile substance or device, and/or explosives, or the project will not be accepted.

You must complete a Designated Supervisor Form, and it must be submitted with the project Registration. You must also be familiar with, and in compliance with, the YSF Policy #4.2.1 "Use of Firearms, Hazardous Materials and Equipment". For the full text of the current release of this Policy, Click here

The Regulations and restrictions relating to Firearms, Explosives and Hazardous Materials are extensive and complex. If you are considering this type of project, we encourage you to get in touch with us. We will provide further details, and help put you in touch with appropriate authorities familiar with current regulations and relevant aspects regarding scientific merit, and for guidance and suggestions in performing the work.

Microorganism Safety & Biohazards

The following hazardous biological materials may not be displayed:

1. Radioisotopes or compounds containing radioisotopes at activities above normal background
2. Biological toxins
3. Micro organisms (the use of mixed cultures obtained from the environment - e.g. soils, mouth swabs - is acceptable for experimentation, but not for display)
4. Cells or tissues infected with animal or plant viruses
5. No cultures are allowed for exhibition (photographs or simulated cultures may be used)
6. No plant tissue, soil or material which could decompose shall be exhibited RCRSTF will allow only healthy plants in clean soil, which pose no risk to the public or the environment, to be on display at the fair (rev. Jan/2005)

Experimentation involving biohazards must be carried out under controlled laboratory conditions and supervision. Evidence of this supervision, including the supervisors name, institution, and qualifications must be included in the Contribution From a Recognized Institution form, and must be submitted with the project Registration.

Recombinant DNA and Biotechnological Safety

Projects involving the manipulation of recombinant DNA molecules or animal viruses are allowed if conducted under qualified supervision. Evidence of this supervision, including the supervisors name, institution, and qualifications must be included in the Contribution From a Recognized Institution form, and must be submitted with the project Registration.

Biotechnological investigations involving enzymes pose risks of allergic reactions. Work involving DNA technology can be accomplished safely if simple precautions are taken. The use of DNA is, in itself, usually safe, but hazards arise from chemicals and electrical equipment employed in the manipulation of DNA. Extremely hazardous chemicals, such as ethidium bromide, used to stain DNA, should be avoided. Electrophoresis of DNA fragments should use low voltages or equipment that prevents access to connections at high voltages.

Live tissue samples used in such investigations must be taken either from continuously maintained tissue culture line already available to institutional researchers, or from animals already being used in an on-going institutional research program. Proof of where such material has been acquired (invoice or letter from supplier) must be available at all times during the fair, and submitted with the project Registration. These animal tissues may only be displayed at the fair if they are prepared and sealed (lamella, plastination).

Regulations for Animal Experimentation in Science Fairs

Biological experimentation is essential for an understanding of living processes. Such studies should lead to a respect for all living things. Capable students, anxious to pursue a career in biological sciences, must receive the necessary encouragement and direction. All aspects of the project must be within the comprehension and capabilities of the student undertaking the study.

Regulations

RCRSTF requires all projects that involve animal experimentation, both vertebrate and invertebrate, to comply with the current version of YSF Policy #4.1.2: "Use of Animals (Vertebrate and Invertebrate) in Research". The latest version of this Policy can be found here.

Please ensure that your project complies with this policy. Document your compliance by providing a copy of the YSF Form "Science Project Human/Animal Research Approval Form", signed by the student(s) AND their Adult Supervisor, at time of RCRSTF Project Registration. If your project is likely to be classed as complex under the policy, also ensure the form is signed by an appropriately qualified Scientific Supervisor. Include a copy of this form in your project notebook, onsite at the RCRSTF fair.

Display of Animals and Animal Parts

Students working on biological projects may involve animals as outlined above. The display of the project is to be a report of completed work, and thus further restrictions are imposed. Also, science fair organizers should try to reduce the potential for adverse reaction from visitors and other exhibitors.

Live Microorganism and vertebrate or non-vertebrate animals shall not be included in the display, although appropriate photographs may be available in the report.

The only parts of vertebrate animals that may be displayed are those that are either naturally shed by an animal or parts properly prepared and preserved. Soft tissue specimens are not acceptable if they are preserved in formaldehyde, a dangerous chemical excluded under the chemical safety sections of these guidelines. Sealed tissue samples on microscope slides are permissible. Thus, porcupine quills (safely contained), shed snake skin, feathers, tanned pelts and hides, antlers, hair samples, skeletons and skeletal parts are permissible, while organ and tissue samples are not. However, photos, videos or slides of organ and tissue samples may be made available for viewing upon request but are not permitted to be placed on display.

Guidelines for Research Involving Human Subjects

RCRSTF requires all projects that involve human participants to comply with the current version of YSF Policy #4.1.1: "Use of Human Participants in Research". The latest

version of this Policy can be found here and here. Please ensure that your project complies with this policy. Document your compliance by providing a copy of the appropriate YSF Form described in the policy, depending upon the Risk Level of your project, at time of RCRSTF Project Registration. Ensure all required signatures are on the form. Proper Risk Assessment is very important; if you need help, please contact RCRSTF, and we will advise you. Include a copy of this form in your project notebook, onsite at the RCRSTF fair. Please do *not* send RCRSTF copies of actual signed Written Informed consent forms. Please *do* send us a sample, unsigned version of the Informed Consent form you have used."

Scientific Review and permission Forms

1. The Renfrew County Regional Science & Technology Fair has adopted the following official YSF Forms for Scientific review and permission. These forms must be used and presented on registration day of the fair. Forms for all grade categories can be found at the following links.
    1. Contribution from a Recognized Institution (Form YSF1)
    2. Designated Supervisor Form (Form YSF3)
    3. Use of Human Participants in Research Form (YSF Forms 4.1.A, 4.1.B, 4.1.1C and
       4.1.1D; last pages of document)
    4. Use of Animals in Research Form (Form YSF4.1.C;

Display of Previous Awards

Awards, certificates, prizes etc. won by you or your project at previous science fairs or competitions are not to be displayed or discussed at the RCRSTF on judging day. We are pleased that you have done well, but do not want to bias our judging process.