

DISPLAY SAFETY REGULATIONS

(Prepared for the Ontario Christian Schools Science Fair)

These regulations must be followed to ensure a safe environment for displaying the science fair projects. Each project will undergo a safety check after the student(s) has set it up, and before the student(s) leaves the display area.

- A. General safety
- B. Fire safety
- C. Chemical safety
- D. Electrical safety
- E. Structural and mechanical safety
- F. X-rays and radiation safety
- G. Microorganism safety
- H. Use of fire-arms, hazardous materials and equipment

A. GENERAL SAFETY

1. All sharp edges or corners on any form of metal plates or glass (e.g. mirrors, etc.) should be removed or covered.
2. Compressed gas cylinders are restricted. See section H below.
3. Use fire proof material to screen or shield from the public any open flames, and never leave a flame burning when the exhibit is unattended.
4. Keep all hoses and extension cords secure to prevent tripping or entanglement.
5. Keep all aisles and exits free of obstruction to prevent any tripping hazards.
6. Moving exhibits (e.g., radio-controlled vehicles, robots) are restricted to the regulation display space. Projects requiring more space for demonstration purposes will be assigned a work area away from the display during judging.
7. Powered aircraft may not be activated at any time.
8. Glue all paper flat to the backboard, or tape all edges. Do not hang overlapping sheets on the backboard; put them in a binder.

B. FIRE SAFETY

1. To prevent fire, all backboards must be constructed from a material at least 1/8" thick. Acceptable products are presentation boards (foam or durable corrugate construction) available at office supply stores, plywood, Masonite (6mm, 1/4"), peg-board, chipboard, particle board or panel board.
The following materials are **unacceptable**: rough corrugated cardboard used for cardboard boxes, free-standing Bristol board, Styrofoam or similar insulation materials.
2. Combustible material should not be used near a heat source.
3. Open flames are to be avoided. If necessary, they are to be protected as noted in A. 3 above, and approved by the safety committee
4. Packing material cannot be stored at the display, and should be removed by the student after the display is set up.

C. CHEMICAL SAFETY

1. Containers of toxic or flammable chemicals are not allowed.
2. Potentially dangerous products are not allowed. This includes prescription drugs, over-the-counter medication, kitchen and laundry supplies, tobacco products and by-products.
3. Toxic or corrosive chemicals are not allowed. Use as substitutes non-toxic material (e.g. water in place of alcohol, salt in place of ammonium nitrate, molasses for petroleum products). Label the containers with the word "simulated" (e.g. Water Simulating Alcohol).

D. ELECTRICAL SAFETY

Electricity is limited. If you need electricity, you must indicate this on your registration form, and the project will be assigned a table with one electrical outlet. If more devices require electricity, bring a power cord.

1. Exposed parts are not to exceed 36 volts, and the current should be low enough to permit touching without causing any pain or danger.
2. All electrical exhibits are to be disconnected when not being viewed.
3. Use only good condition extension cords with CSA approval.
4. Pilot lights indicating that voltage is on are highly recommended.
5. Electrical appliances with cords require a 3-prong plug.
6. All non-current carrying metal parts must be grounded.
7. 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.

E. STRUCTURAL AND MECHANICAL SAFETY

1. Exhibits are to be structurally stable and able to withstand being tipped over.
2. All moving parts are to be suitably guarded.
3. Pressurized containers are restricted as noted under H below.

F. X-RAY AND RADIATION SAFETY

1. Exhibits using x-rays or radiation require government approval. Written approval is required before such an exhibit can be displayed. Contact the provincial government for further information.
2. Lasers cannot be operated during public viewing periods.

G. MICROORGANISM SAFETY

1. The following materials cannot be placed on display:
 - radio-isotopes or compounds emitting radioactivity above background levels.
 - biological toxins.
 - pathogenic microorganisms.
 - cells or tissues infected with animal viruses.
2. All cultures placed on display are to be sealed.

H. USE OF FIRE-ARMS, HAZARDOUS MATERIALS AND EQUIPMENT

Please consult the extensive list at Youth Science Canada:

[<https://www.youthscience.ca/policy/use-firearms-hazardous-materials-and-equipment>]

The following is a summary of some of these regulations:

- Fire arms are not permitted in the display facility. Fire arms may be part of a science project, but the student must adhere to the regulations listed by Youth Science Canada.
- Volatile materials must be handled and transported pursuant to the federal Transportation of Dangerous Goods Act and provincial legislation. The person handling the material must be properly trained. Explosives must be acquired, stored and handled pursuant to the federal Explosives Act.
- A pressure vessel constructed for or used in a project, with a capacity greater than 42.5 litres or operated at a pressure greater than 103 kilopascals, must be inspected and certified for use by an inspector appointed under the Boilers and Pressure Vessels Act/Regulations. A certificate of inspection must be available at the project display.
- Students using pesticides must be of provincial/territorial age for possession and use. Students must also be licenced under the provincial or territorial law that regulates pesticides. If a student is not of age to be licensed, then he/she must be supervised by a person who is licensed. The applicable licence or a certified copy must be available at the display.

Eligibility of Student

- A student must be in grade 7 or 8 and enrolled in privately-funded Ontario Christian School. Students associated with an Ontario Christian Home School Association will be considered eligible on a case-by-case basis (to determine eligibility contact Gary Chiang at ocssciencefair2015@gmail.com), but participation may be restricted due to space limitations.

Eligibility of Project

- All projects must have participated in a science fair at their local school or with their Christian Home School Association, prior to entering the Ontario Christian Schools Science Fair.
- All projects must meet the regulation requirements regarding safety and ethics as outlined by Youth Science Canada, Ethics [<http://cwsf.youthscience.ca/node/835>]. These include:
 - i) Participation of Humans - Low Risk
 - ii) Participation of Humans - Significant Risk
 - iii) Use of Invertebrate Animals
 - iv) Use of Vertebrate Animals
 - v) Hazardous Materials Policy

If one or more of these categories apply to a project, the project must display the following statement signed by the teacher:

<p>This project adheres to the policy (policies) on _____ as outlined by Youth Science Canada. Teacher's name: _____. Teacher's signature: _____</p>
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The Display:

1. Display space is limited, so the display must fit within an area of 4 feet wide and 2 feet deep (1.2 m x 0.61 m). Height is not limited but the display must be secure. If the height is considered dangerous (i.e., the display is unstable because it can topple over), it will need to be modified before it can be left on display. It is not possible to attach the display to the ceiling.
2. To prevent fire, all display boards must be constructed from a material at least 1/8" thick. Acceptable products are presentation boards (foam or durable corrugate construction) available at office supply stores, plywood, Masonite (6mm, 1/4"), peg-board, chipboard, particle board or panel board.
The following materials are **unacceptable**: rough corrugated cardboard used for cardboard boxes, free-standing Bristol board, Styrofoam or similar insulation materials,
3. If your project uses an oversized working model, such as a bicycle for generating power, be prepared to set up the model in an area of the facility that is not with the project display.
4. There cannot be any objects on the floor in front of the table that will pose a tripping hazard or prevent access to the project for judging purposes.