Hydro-Québec SCIENCE FAIR

2021 SCIENCE FAIR RULES PRIMARY

Please read completely and carefully before beginning your project. These rules are valid for all Science Fair levels.

IMPORTANT These rules apply to the Juvenile 1, Juvenile 2, Juvenile 3 and replace all previous rules.

The purpose of these rules is to ensure the safety of the public and the exhibitors, as well as make the latter aware of the importance of ethics in the field of scientific research. These rules do not limit the exhibitors' creativity or the scientific process; rather, they encourage participants to work in a safe and structured manner, as do professionals in the research community.

Experiments that pose risks during presentation to the general public should be conducted prior to the Science Fair and exhibited during the event using diagrams, photographs, slide shows, videos, simulations, etc.

For any additional information you need to prepare your Science Fair project, please thoroughly read the content of the official Science Fair website at technoscience.ca.

Since the 2019 edition of Hydro-Québec Science Fair, exhibitors in the Primary (Juvenile) classification no longer have to produce a written report.

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1. APPLICATION OF THE RULES

1.1 The Réseau Technoscience and its affiliated organization are responsible for organizing the Science Fairs across Québec (Regional Finals and Québec Final).

1.2 **The Réseau Technoscience oversees** the provincial committee responsible for applying regulations for Expo-sciences Québec.

1.3 **The Provincial Judging Committee** is the only entity empowered to make a final decision regarding regulations and ethics for all Expo-sciences across Québec. No third-party authorization (school, teacher, company, etc.) is admissible for using materials or methods that do not comply with Expo-sciences regulations.

In all circumstances and at its discretion after informing the exhibitor and his or her supervisor, the Provincial Judging Committee reserves the right to make a decision on any issue related to the application of these regulations and on any ethical issue.

Any information request to the Rules Application Committee must be submitted via e-mail to reglements@technoscience.ca.

1.4 **ONLY the Provincial Judging Committee is empowered to disqualify a project deemed non-compliant.**

1.5 An exhibitor may be penalized or disqualified before, during or after the Science Fair.

1.6 General definitions

– A **recognized institution** is an establishment (e.g., public or private research centre or laboratory, university, hospital, primary, secondary or post-secondary educational institution), of which one mandate is to conduct research, teaching or technology-transfer activities. In order to be recognized, such an institution must comply with ethical rules and principles and with these regulations.

- A **scientific supervisor** is a person who holds a scientific position within the recognized institution **AND** ensures that the proposed project complies with ethical rules and principles applicable in Canada and with safety regulations. He or she is responsible, on behalf of the recognized institution, for justifying the recognized institution's participation in the proposed project.

2. ELIGIBILITY

2.1 A maximum of two persons is accepted per project team.

2.2 Exhibitors in the Juvenile classification are not eligible for the Expo-sciences Québec Final.

2.3 Exhibitors must attend a school that is part of a school board in a territory covered by a Réseau Technoscience affiliate, or conduct their project with an organization recognized by the Réseau Technoscience.

2.4 Exhibitors may present only one project per year and may not take part in more than one Regional Final.

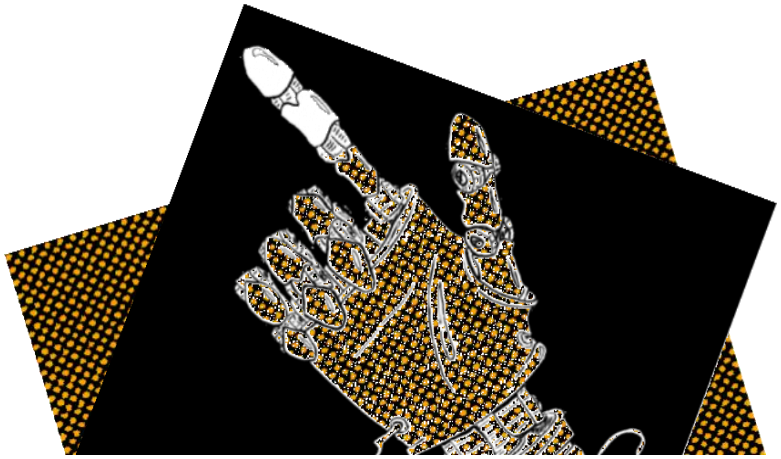
2.5 An exhibitor in the Primary classification is not allowed to present a project with an exhibitor in the Secondary/CEGEP classification at Expo-sciences.

2.6 To be eligible, a Science Fair project must employ a scientific process.

2.7 **Projects requiring the active participation of human subjects,** including intellectual and physical test, surveys, observations and behavioural studies, **are not permitted in the Primary classification.**

2.8 No violent or hate-related project or material is accepted at the Science Fair.

2.9 Projects must avoid presenting data based on false information. Statements must be supported by reliable, recognized and verifiable sources.



3. EXHIBITORS' COMMITMENTS

3.1 Obey the rules of the Science Fair.

3.2 Be present at all stages of the event (set-up, verification of the project by the Rules Application Committee, safety check, judging, exhibitions to the general public, activities, awards ceremony, etc.).

3.3 Be present at their booths at all times that the fair is open to the public.

3.4 Set up and dismantle their booths during the periods set aside for this purpose in the schedule.

3.5 Show respect for other competitors, chaperones, members of the public, and members of the organizing committee.

3.6 Follow the instructions of the adults accompanying them or the organizing committee.

3.7 Correctly complete the project registration form and all other documents required at the time of online registration.

3.8 Exhibitors are required to present complete information relative to their project, unless otherwise specified by the Provincial Judging Committee.

3.9 If a solo or duo project is selected to move on to a higher level of the competition and either of the exhibitors cannot comply with these commitments, the withdrawal or change of status form must be completed and returned to the appropriate Réseau Technoscience partner.

4. INTELLECTUAL PROPERTY

4.1 Any project that infringes upon another person's intellectual property including: compromised, including;

– any type of plagiarism or self-plagiarism;

– falsification or counterfeiting;

– an incomplete bibliography or mediagraphy;

– omission of quotation marks;

– or other such behaviour;

will be penalized and, potentially, disqualified The Réseau Technoscience reserves the right to use, for the written report, plagiarism detection software to apply this regulation.

4.2 All photos used to decorate the booth must be credited to a source.

4.3 The authors of all or part of a computer program or any other type of technology, methodology or procedure not designed by the exhibitor must be clearly credited.

4.4 Any contribution by a mentor or any other person connected with the project must be listed in the bibliography of the written report as well as when presenting the project.

5. PROJECTS USING ANIMALS OR BIOLOGICAL MATERIAL

5.1 **Projects involving the participation of human subjects**, including intellectual and physical tests, survey, observations, behavioral study and study on cells or tissues, **are not permitted in the Primary classification**.

5.2 **ALL projects using:**

- **live vertebrates (excluding humans) and live invertebrates**
- cells, tissues or any other biological material from vertebrates
- microorganisms including bacteria, mycobacteria, viruses, fungi (yeasts and filamentous fungi) or primitive organisms (e.g., protozoa)
- hazardous biological or chemical substances, such as, without limitation, proteins, enzymes or other macromolecules such as DNA, RNA or any potentially allergenic or hazardous substance of animal or plant origin
- any other biological material of animal origin (excluding humans)

are allowed only on the following conditions:

1. the project has obtained the Approval Certificate (Form B2) of the Provincial Judging Committee BEFORE being launched. See section 7.
2. the exhibitor has performed the entire experimental part of his or her project in a recognized institution (see definition 1.7) that applies the guidelines and policies of the Canadian Council on Animal Care (CCAC).
3. a recognized institution has provided the living or sacrificed vertebrates, or any other material of animal origin, or any hazardous biological or chemical substances, as defined above.

5.3 **The project may not use invertebrates with higher neurophysiological development (e.g., cephalopods) or vertebrates, or even parts of such animals, if they were sacrificed for the sole purpose of meeting the Science Fair project's requirements or if the animals' well-being is not assured**. Accordingly, the use of such animals is allowed if and only if the recognized institution requires them for its own research activities. Those animals, or animal parts, will thus be "shared."

5.4 The project may use invertebrates with lower neurophysiological development (e.g., insects, shellfish, mollusks, with the exception of cephalopods) or parts of such invertebrates to the extent that they were treated with collection, sacrificing and conservation methods recognized by the CCAC and ensuring the animals' well-being.

5.5 Animals of any type should be used only if the exhibitor and his or her scientific supervisor could not find valid alternative methods.

The exhibitor and his or her scientific supervisor are responsible for demonstrating that projects involving animals, whether sacrificed or not, use methods recognized by the CCAC that ensure the species' well-being and are used on as few animals as possible.

5.6 Projects involving the study of:

- embryonic, larval or fetal stages of vertebrates, including eggs;
- rare or threatened species or some of their parts (e.g., feathers, scales, roots) are limited to observation.

5.7 The observation of wild animals in their natural habitat, zoo animals, farm livestock or domestic animals is permitted. In some cases, special permission from wildlife conservation services may be required.

6. PROJECT USING CHEMICALS

6.1 ALL projects using biological or chemical products that pose a risk to the experimenter or his/her entourage, including, without limitation, the following chemicals:

6.1.1 **Carcinogenic, mutagenic or teratogenic substances** such as benzenes and PCBs (polynuclear hydrocarbons), dioxins or highly toxic substances such as arsenic or its derivatives, cyanides, mercury, etc.;

6.1.2 **Explosive substances** such as acetylenes, compounds containing mutually linked heteroatoms such as perchlorates, peroxides, ethers, polynitrates or any other chemical compound belonging to a class of substances that pose a risk of spontaneous or exothermic reactions or produce a gas;

6.1.3 **Highly flammable substances**, e.g., volatile solvents such as acetone, methanol, ethanol, ethers; reactive metals or their derivatives such as sodium or magnesium; flammable gases such as alkanes (e.g., propane); or corrosive and highly reactive gases such as chlorine, hydrogen and oxygen;

6.1.4 **Cryogenic substances** such as liquid nitrogen or dry ice;

6.1.5 **Chemical substances or mixtures producing strong odours**, e.g., volatile sulphur derivatives such as hydrogen sulphide or thiols;

6.1.6 **Pharmaceutical or veterinary products** of any nature, in sealed or unsealed packaging;

6.1.7 **Substances that are illegal** under the Food and Drug Act (e.g., amphetamines, barbiturates) and the Narcotics Control Act (e.g., cocaine, morphine, codeine);

6.1.8 **Any substance that is corrosive** or that may cause injury (e.g., automobile batteries);

6.1.9 **All controlled substances**, such as any type of alcoholic beverage, cannabis or any other type of product containing them.

Are allowed only on the following conditions:

1. the project has obtained the **Approval Certificate (Form B2)** of the Provincial Judging Committee **BEFORE being launched**. See section 7.
2. the project is **overseen** by a supervising scientist from a **recognized institution**;
3. the exhibitor has performed the entire experimental part of his project in a recognized institution (see definition 1.7).

7. FORM D

7.1 Form D is mandatory for projects:

- using animals or biological material (section 5 of the regulations)
- using biological or chemical substances (section 6 of the regulations)

7.2 Mandatory steps BEFORE proceeding with an experiment:

7.2.1 By **APRIL 1, 2021 AT THE LATEST**, complete and submit Form D (online)

7.2.2 You must, among other things, provide the following information:

- information on your scientific supervisor
- information on your recognized institution
- the research protocol
- the risk assessment
- blank data collection tools (blank survey, observation checklists, etc.).

7.3 Following submission of your Form D, the Provincial Rules Committee analyse Forms D and received documents.
- ONLY if a project is deemed compliant, the Provincial Rules Committee of the Réseau Technoscience will issue the Approval Certificate (Form B2) allowing exhibitors to launch their experiment.
- Once the Approval Certificate is received, exhibitors may begin their project, or begin the laboratory work.

7.4 When registering for the Regional Final, exhibitors must electronically upload form B2 within the deadline prescribed during the online registration.

8. GENERAL RULES

8.1 The organizers are not required to provide Internet connectivity on the Science Fair site.

8.2 The exhibitor must be able to identify **all** products and items that are displayed on their tables.

9. GENERAL SAFETY

9.1 Aisles, the spaces beneath and areas surrounding booth tables must be kept clear at all times, in accordance with fi e regulations.

9.2 Assemblies and scale models must remain on booth tables at all times and must not exceed the available space. For more size information, please consult the document Display Standards for Booths.

9.3 Assemblies using liquid **must use only water**. The maximum quantity that can be present at the booth is 1 litre. The water must be in a fixed, leak-proof container. It will not be possible to supply the assembly with water during hours open to the public.

9.4 Any assembly requiring a liquid other than water must be presented in the form of photos or videos.

9.5 Any noise generated by a project must be of a reasonable level, such that it does not disturb other exhibitors and the public.

9.6 The project display as well as any assembly or part of an assembly must be free of any pointed ends posing any risk whatsoever (e.g., propeller blades, wooden sticks). All dangerous extremities must be used and covered safely.

9.7 All rubber tubing and electrical cords must be in good condition, as short as possible and anchored so that no one can accidentally trip on them. Ideally, tubing and electrical cords should pass behind the stand or be secured on the table.

9.8 Vacuum pumps and any other motor-powered belt systems must be equipped with protective shielding

9.9 Substances giving off odours that may cause discomfort, such as perfumes and incense, must be kept in hermetically sealed, unbreakable containers.

9.10 Biological material must be presented in the form of sealed lamella or plastination.

9.11 **The following are prohibited on the Science Fair site:**

- tastings;
- taking of blood samples or injections;
- flames or heat sources (e.g.: electric heating elements, burners, kettles, candles, hotplates);
- data collections on members of the public from which information is retained.
- The prohibitions in sections 10, 11 and 12 also apply.

10. CHEMICAL SAFETY

10.1 Prohibited on the Science Fair site are all chemicals that pose a risk to exhibitors, visitors and physical locations, including, without limitation, the chemicals described in section 6.

10.2 In the event an exhibitor decides to substitute a prohibited substance with a harmless one, he/she must clearly indicate on the container the exact nature of the substitute, e.g., "simulated sodium nitrate (table salt)."

10.3 In all cases, when the use of hazardous substances (e.g., mercury) is unavoidable, these substances must be an integral part of a commercially available device (e.g., thermometers) and comply in all respects with generally approved safety standards regarding their use in public places (e.g., CSA [Canadian Standards Association] approval).

11. ELECTRICAL SAFETY, LASERS, RADIATION, RADIOISOTOPES AND ULTRAVIOLET RAYS

11.1 No portion of exposed wiring may be powered by more than 36 V (direct or alternating current) compared with the reference (ground, power supply, casing). The current must not exceed 5 amps.

11.2 Devices or assemblies using electric light bulbs may total **no more than** 40 watts. They must never present a burn hazard

11.3 Only three-pronged electrical extension cords that are grounded and in good condition are permitted on sites.

11.4 All electrical devices must be equipped with a three-pronged power cord and be grounded or CSA-approved.

11.5 All homemade electrical devices must be equipped with a grommet at the point where the power cord passes through the casing.

11.6 Participants must ensure that all electrical devices and multi-outlet power bars, as well as computers used for their projects, are turned off at the end of each day.

The following are prohibited on the Science Fair site:

11.7 Instruments emitting any form of X-rays (microwaves, X-rays, infrared lights) freely into the atmosphere.

11.8 All laser pointers.

11.9 Experiments based on radioisotopes or ionizing radiation and radioactive substances.

During the judging period ONLY:

11.10 Devices that operate with laser or ultraviolet rays may be used during the judging period only. However, such devices are permitted on the Science Fair site only on condition that their emissions are contained and maintained within the following standards:

11.10.1 the assembly from the laser's emitting source to the receiver must be controlled (set) so that the beam cannot hit the eye of an observer, a passer-by or the exhibitor. It must not surpass Class 1, as specified in Standard ANSI Z 136.1-1993 (American National Standard for Safe Use of Lasers). The power of any laser device used on site must not exceed 2.0 mW;

11.10.2 the power of UV-rays emitting sources must not exceed 25 watts. They must be commercial devices and their emitting specifications must be available on request.

12. EXHIBITING ANIMALS, ANIMAL PARTS AND PLANT LIFE

The following are prohibited on the Science Fair site:

12.1 Live vertebrates or invertebrates.

12.2 Live microorganisms.

12.3 Human and animal fetuses, dissections and products from previous dissections, as well as specimens preserved in formalin or any other preservation substance.

12.4 The following biological substances or materials:

- 12.4.1 Biological toxins;
- 12.4.2 Bacterial, viral or fungal cultures;
- 12.4.3 Cells or tissues infected by animal or humans viruses;
- 12.4.4 Bodily fluids (e.g., urine, serum, blood, sperm) and fecal matter.
- 12.4.5 Petri dishes containing agar.

12.5 Known allergenic plants (ragweed, poison ivy, etc.).

12.6 Highly perishable products of vegetable or animal origin.

The following may be displayed on the Science Fair site:

12.7 Appropriate photographs, slides and videos of the animals may be exhibited at the booth.

12.8 Hermetically sealed collections (insects, etc.).

12.9 Parts of vertebrates that have been lost through natural causes (shells, porcupine quills, cast-off skin, feathers, hair, antlers, etc.) may be displayed at the booth.

12.10 Mounted animals, treated skins, skeletons and parts of skeletons that have been properly cleaned and preserved are permitted. Proof of acquisition and proper taxidermy (invoice or letter from the supplier or lending institution) must be available at the booth during the Science Fair.

13. REGIONAL FINALS – DECORATION AND VISUAL DISPLAYS

13.1 Exhibitors must contact their local Réseau Technoscience affiliate or partner organization for all information regarding booths technical requirements and specifications.

13.2 Booths will be set up on tables with the project displayed on the front.

13.3 For decorative purposes, posters must be applied directly to the booth.

13.4 No decorative items may be affixed permanently or in a manner that would modify the booths.

13.5 Elements not affixed to the booth may be placed on the table.

13.6 Corrugated cardboard and Coroplast **are prohibited** for decorating and for use in scale models.

13.7 The table may not be partially or totally covered with a cloth. If necessary, you can obtain a special covering from the organizing committee.

13.8 No roof, dome, fabric or other method of covering the top or sides of the booth will be accepted.

At a Regional Final, fill-in lighting may be prohibited; exhibitors must check with **their local Réseau Technoscience affiliate or partner organization.**

A program of RÉSEAU TECHNOSCIENCE Together for a new scientific generation

Presenting partner Hydro Québec

2021 Science Fair Rules
Primary Revised version: October 2020