



Use of Firearms, Hazardous Materials and Equipment

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Policy Section:	4.2 Youth Science & Technology Research - Safety
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Contact:	National Judging Committee

1 Introduction

- 1.1 Youth Science Canada and Regional Science Fairs allow students to conduct research involving hazardous materials, equipment and firearms as long as they adhere to federal and provincial/territorial regulations and guidelines that are designed to protect the safety of the researchers.
- 1.2 Any experimental design involving firearms, and/or hazardous devices, must be approved by a Regional or Youth Science Canada National Ethics Committee to ensure compliance with regulations and restrictions. If necessary, Youth Science Canada will refer the project to the authorities cognizant of current regulations.
- 1.3 Use of hazardous equipment, dangerous goods, explosives and firearms requires proper supervision by an Adult Supervisor. The Adult Supervisor must be directly responsible for overseeing student experimentation and must provide proof to the Regional Science Fair Ethics Committee of his/her licensing and expertise in the use of a firearm, volatile substance or device, and/or explosives BEFORE the project commences.
- 1.4 When considering a project which involves the use of firearms, ammunition, dangerous goods or explosives, it is strongly suggested that students and Adult Supervisors make contact with one or more of the following agencies/government ministries: RCMP, Provincial Police, Municipal Police, Federal and Provincial Justice Ministries, Provincial Ministries responsible for hunting and fishing regulations, Municipal offices regarding the use of firearms within their jurisdiction, National and Provincial hunting organizations, Natural Resources Canada.

2 Legislative Framework

- 2.1 Potential violations of the Criminal Code, Explosives Act and Transportation of Dangerous Goods Act must be considered and researched prior to experimentation: Criminal Code considerations that should be addressed by students and Ethics Committees in reviewing a project include:
 - a) Possess, trade, transfer or give as a gift a firearm to a person without a Possession Only Licence (POL) or a Possession and Acquisition Licence (PAL) with the proper classes of firearms.

- b) Unlawfully making an explosive.
 - c) Possession of a weapon dangerous to the public peace.
 - d) Unlawful storage of a firearm, ammunition or explosive.
 - e) Pointing a firearm.
 - f) Careless use of a firearm.
 - g) Criminal Negligence causing bodily harm or death.
 - h) Arson or unlawfully setting fire to a substance.
 - i) Fail to sign vehicle properly that a dangerous good is being transported.
- 2.2 Other considerations for projects involving the use of firearms, ammunition, dangerous goods or explosives include Provincial and Federal acts such as the Environmental Protection Act, Migratory Bird Game Act and Canada Shipping Act. Students and the Regional and Youth Science Canada National Ethics Committees are responsible for knowledge of and adherence to all Municipal, Provincial and Federal laws governing the materials and the use of those materials.
- 2.3 Prohibited weapons may NOT be used in a science fair experiment or displayed or worn at a science fair. Prohibited weapons include spiked wrist bands and neck bands, maces, martial arts throwing weapons, nanchakus or any other weapons defined by the Criminal Code as prohibited.
- 2.4 Weapons include all firearms or anything else that may be used as a weapon. Pellet guns, paint ball guns, slingshots, potato guns or other devices that propel an object are, for the purposes of subsection 2.1.c and 2.1.g, dangerous weapons. These devices may be used with the pre-approval of the Regional Science Fair Safety Committee. Inspection of the device and area of use is the responsibility of the Regional Science Fair Safety Committee. The device shall not be displayed at the Regional Science Fair or the Canada-Wide Science Fair.

3 Firearms

- 3.1 As of January 1, 2001, anyone possessing a firearm, even temporarily, must have a POL or PAL. Persons under 18 years of age may acquire a Minor's Possession Certificate and can only possess non-restricted weapons.
- 3.2 Minors cannot possess restricted weapons.
- a) All handguns are restricted or prohibited weapons.
 - b) All crossbows are restricted weapons.
 - c) Any firearm with a barrel length less than 470mm or overall length less than 660mm is a restricted weapon.
- 3.3 As of January 1, 2003, firearms used for any purpose, including science projects must be registered and the person possessing the firearm must have, at all times, the registration certificate with the firearm.
- 3.4 An individual may load a firearm or handle a loaded firearm only in a place where the firearm may be lawfully discharged in accordance with all applicable Acts of Parliament and the legislature of the province/territory, regulations made under such Acts and Municipal By-Laws.
- 3.5 Where practicable, the discharging of a firearm should be conducted at a licenced range under the supervision of a qualified range master. All available safety equipment (e.g.,

goggles, ear protection) should be used. First Nations People and other persons residing in northern areas where licenced firearms ranges and qualified range masters are not readily available shall provide a safety protocol to the Ethics/Safety Committee for approval before the project commences.

- 3.6 In all cases involving firearms, the Adult Supervisor must possess a POL or PAL 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 Adult Supervisor must have reached the age of majority (18 years).
- 3.7 Students wanting to use firearms must show proof of a Hunter Safety Course/POL or PAL and/or Canadian Firearms Safety course or equivalent. Copies of these certificates must be provided to the Ethics Committee in advance of beginning the experiment. The Ethics/Safety Committee shall retain copies of the documents.
- 3.8 For firearms requiring federal and/or provincial/territorial permit or registration, the student or Adult Supervisor will be expected to have the permit prior to the onset of the experimentation. A copy of the permit must be submitted to the relevant Ethics Committee. Only firearms/explosive devices, which have federal, provincial/territorial and municipal approval, may be used in experimentation. Proof of this approval must be presented to the Ethics Committee with the student's proposal in advance of beginning the experiment.

4 Volatile and Explosive Materials

- 4.1 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.

5 Boilers and Pressure Vessels

- 5.1 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.
- 5.2 Any finalist-constructed pressure vessel, regardless of size or pressure, should be inspected according to provincial regulation prior to use by an engineer with certification in boilers and pressure vessels to ensure the safety of the young scientist. Evidence of the inspection should be available at the display.
- 5.3 Any pressure vessel must have a safety valve, rupture disc or similar device to limit internal pressure below the burst pressure of the vessel. The safety valve shall relieve to a safe or remote area.

6 Pesticides

- 6.1 Pesticides are defined as substances used to prevent, destroy, repel, attract or control pests like insects, weeds or diseases. Major types of pesticides include:

Type	Controls
insecticide	insects
herbicide	plants – mostly weeds
fungicide	fungi

rodenticide	rodents
miticide	mites
nematicide	nematode worms

- 6.2 Pesticides are regulated by three levels of government: federal, provincial/territorial and municipal. The federal Pest Control Products Act (PCPA) is the federal law that regulates all products used to control pests in Canada. The Pest Management Regulatory Agency (PMRA), Health Canada is responsible for administering the PCPA and its Regulations. A number of other federal laws, such as the Food and Drugs Act, Fertilizer Act, Fisheries Act, Migratory Birds Convention Act and the Canadian Environmental Protection Act also regulate the use of pesticides. Each Province sets out its own laws for the control, use, sale, storage, display, disposal and transportation of pesticides. A number of municipalities have banned the use of pesticides.
- 6.3 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 to the safety inspectors at the Regional and/or Canada-Wide Science Fair.
- 6.4 Pesticides, pesticide containers or items that have been treated with pesticides shall not be displayed at any Regional or Canada-Wide Science Fair. Disposal of these containers must be done in accordance with Provincial and Municipal rules and regulations.