

STAO Guidance Document - Template

School Board Science Procedures

Introduction

This document is an example of an administrative procedure for science departments for use by boards in Ontario. The purpose of this document is to help boards compare their current procedures and documentation, where they exist, and create one for those where they are not in place. Boards are encouraged to adopt and adapt the items below, where appropriate, into their science safety management systems, policies and procedures.

This document draws on key information found in STAO's *Science Facility Safety* and other safety resources such as *Safer Use of Chemicals in School Science Laboratories* and *Safe ON Science*. In addition STAO wishes to thank Lambton Kent District School Board for permission to use its Science Administrative Procedures as an additional reference.

Access to science areas and general safety features

The Principal or designate shall ensure that:

(Include statement about board expectations for)

- A process how appropriate safety signage is posted throughout the science areas where hazardous materials are stored and handled.
- A process for allocating science keys and to secure access to science classrooms, storage/prep areas.
- A process for prevention and control of accidental releases for gas, power, and water systems.
- How security for science classrooms, laboratories, and storage areas remain in place during extended periods of non-use, e.g., summer vacation, March Break, and Christmas holidays.
- How emergency equipment, e.g., eye wash, safety showers and fire extinguishers are inspected and maintained as prescribed in board protocol.

The Health and Safety Officer, through the H&S Program, will ensure that:

- An annual review of all site specific safety documents such as board secondary science safety procedures will take place.
- A list of approved science resource organizations is provided for staff use and outreach as part of ongoing support of professional development in science safety, e.g., budgeting of board membership in STAO for (digital) access to resource materials, e.g., participation at conferences where science safety content is included.

The Board's Purchasing Department will:

- Provide description of how the purchasing department will have over sight of approved (restricted and/or banned) chemical purchasing by schools.

Animal Materials and Microbes

The Principal or designate will ensure the following:

- A description of the types of animal materials and/or microbes to be permitted for purchase, e.g., from an authorized supplier: educational supply company, butcher, or abattoir.
- Statement about safe handling of biological specimen by staff.

- If the use of bleach is restricted, a description of alternate procedures for disinfecting.
- Statement about waste disposal procedures and labelling of specimen and waste fluids.
- Description of use, handling and disposal of formaldehyde if part of preservative inventory.
- A description of the lab review prior to doing any microbial analysis, see the STAO resource *Safe On Science*, as well as other references supplied by the board.

Plants and Live Animals

The Principal or designate shall determine

- If live animals are permitted and kept in the school.
- Relevant sections of *Safe ON Science* are reviewed with respect to (insert the board expectation for each) – live animals,
 - plants and
 - greenhouses

Staff Training (Science Safety Literacy) under the supervision of principal or designate

(Include statement about board expectations for)

- How the board benchmarks its performance in science safety, e.g., over and above legislative requirements, STAO safety resources are referenced as the primary source for the board's management systems, e.g., staff are expected to refer to *Safe ON Science* in their day to day needs.
- Appropriate Science lab safety training and the ongoing frequency of training for new staff or new to science, e.g., at the beginning of each semester, teachers new to the Board as well as teachers new to teaching Science, will participate in special training on hazard identification in the laboratory.
- Participation of all Science staff in appropriate lab safety training on an on-going basis.
- The role of the Health and Safety Officer and other board personnel with safety roles in determining a schedule for completion of this training.

Workplace Hazardous Material Information System (WHMIS 2015)

The Principal or designate shall ensure that:

- Science teachers, both permanent and occasional, have received WHMIS 2015 training under the standard of care prior to working with or in the vicinity of any controlled product in the science area and adhere to the Board's WHMIS 2015 Administrative Procedure.

Hazardous Waste Removal Program

The Health & Safety Officer or designate shall ensure that:

- Any required Ministry documentation, e.g., tracking waste volumes are signed and sent to the H&S Department, (where applicable, see Small Quantity Exemption as a possible example).
- There are hazardous waste pick-ups on a specified frequency, e.g., one per semester for each secondary school to prevent long-term storage of hazardous waste.
- Roles/responsibilities outline the process for purging chemicals or containers which are beyond their life span.
- A Hazardous Waste Inventory form is accurately completed on a specified frequency and includes room numbers and the contact person.
- There is an outline of expectations for safe handling, labelling, storage and documentation of specimen waste.
- Board expectations for other equipment for disposal, e.g., sharps, 3D printers, ink cartridges, etc. is included in this section.

Science Fairs and Other Projects

The Principal or designate will ensure that:

- A written outline of the project is developed and submitted to the principal for approval prior to starting any project and completed off-site (i.e. Science Fair Projects).
 - Prior to starting these projects the relevant staff and students will meet with the Principal to discuss specific materials and procedures required. It is the Principal's responsibility to ensure that reasonable precautions as stated but not limited to, e.g., the Occupational Health and Safety Act are followed.
 - There should be a review of the guidelines in Youth Science Foundation for Canada Wide Science Fair, as referenced in *Safe ON Science*.
- The project outline is suitable for the project. This includes giving consideration to ventilation, storage, equipment and chemicals required. Only approved chemicals and equipment may be used.

Science Safety Inspections

The Health & Safety Officer shall ensure that:

- All chemical storage areas, fume hoods, chemical exhaust vents, emergency shut-off systems and waste neutralizers, including acid pits are inspected, maintained and tagged on a specified frequency.
- The Secondary Joint Health & Safety Committee reviews the general inspection process of all Science areas in accordance with Occupational Health & Safety Act.

Laboratory, Chemical Storage and Science Room

The Principal or designate shall ensure that:

Include statement about board expectations for:

- An appropriate system of storing chemicals, which is documented and in practice, see *Safe ON Science* or *Science Facility Safety 'Chemical Storage and the Science Prep Room'* for more detail.
- Permitted occupancy of teachers in science work areas.
- Staff in terms of role modelling and conducting lab activities, e.g., review of emergency procedures, promotion of safety culture.
- Student Science Safety Agreement and how this agreement will be completed, submitted for documentation and kept on file.
- The process for reporting of defective lab tools or defects in building infrastructure.
- Guarding of power equipment/machinery when in place and operational.
- Machines/equipment if missing the proper guarding or in need of repair.
- Lock-out Procedures to prevent injury of others.
- Alterations, repairs or modifications to the school's electrical (i.e. installing an outlet), gas lines, water lines or the fabric of the building and the procedure when modifications are required.
- Approved electrical equipment in Science laboratories and how they are labelled/tagged.
- Procedure for ordering and installing new equipment, including donated items, personal and non-school projects.
- The consumption of food products and/or water in chemical preparation or laboratory areas, including the re-use of water bottles and other improper containers to store lab activities.
- The use of refrigerators and microwaves in science areas.
- The use of portable propane torch type cylinders and/or portable Bunsen burners which are prohibited in schools.

Implementation Date:

Revised:

Board references used:

School Board (Administrative) Science Procedures

STAO References:

Safe ON Science

Safer Use of Chemicals in School Science Laboratories

Science Facility Safety

and

Lambton Kent District School Board