



SECONDARY SCHOOL SCIENCE LABORATORY SAFETY PROCEDURE

STATEMENT OF AIM

To ensure the safety and well-being of students and staff while conducting laboratory experiments and activities.

RATIONALE

1. To provide a safe and controlled environment for students to engage in scientific exploration and learning.
2. To minimize the risk of accidents, injuries, and hazardous situations within the laboratory.
3. To instill responsible laboratory practices and foster a culture of safety among students and staff.

PROCEDURE

Laboratory Access and Usage:

- A. Laboratories are accessible only to authorized personnel, including students only under the supervision of a qualified teacher.
- B. Students must obtain permission before entering a laboratory and always be accompanied by a member of staff.
- C. Laboratory equipment and materials should only be used for educational purposes as instructed by the teacher.

General rules and dress code:

- A. Appropriate personal protective equipment (PPE) such as lab coats, safety goggles, and gloves must be worn as instructed. Many materials in the lab can cause eye injury. To protect yourself from possible injury, wear safety goggles whenever you are working with chemicals, Bunsen burners, heating plates or any substance that might get into your eyes.
- B. Read all directions for any experiment several times.
- C. Never perform activities that are not authorized by your teacher.
- D. Never handle any equipment unless you have specific permission.
- E. Never eat in the lab. Wash your hands before and after each experiment.
- F. All personal belongings (bags, jackets, clothes etc.) must be left outside the laboratories.
- G. Tie back long hair to keep it away from chemicals, burners, hotplates, candles or other lab equipment.
- H. Do not wear jewelry or loose clothing on lab days.
- I. Do not wear open toe shoes in the lab.

Handling Chemicals and Materials:

- A. Follow specific instructions for the handling, storage, and disposal of chemicals and materials provided by the teacher.
- B. Never taste or ingest any chemicals or substances used in the laboratory.
- C. Report any spills, accidents, or chemical exposures immediately to the teacher.
- D. If spills occur, ask your teacher immediately about the proper cleanup procedure.
- E. Never mix chemicals for the 'fun of it.' You might produce a dangerous mix.
- F. Never touch, taste, or smell a chemical unless instructed to do so by a teacher. If you are instructed to note the fumes in an experiment, gently wave your hand over the open container and "waft" the fumes toward your nose. DO NOT inhale the fumes directly from the container.
- G. Dispose of all chemicals as specified by your teacher. To avoid contamination, never return chemicals to their original containers.
- H. Never cut material toward you; cut away from you.
- I. Notify your teacher immediately if you cut yourself in the lab.

Heating and Fire Safety:

- A. Never heat a chemical you are not instructed to heat. A chemical that is harmless when cool can be dangerous when heated!
- B. Point a container that is being heated away from you and others. Chemicals may splash or boil out!
- C. Never pick up a container that has been heated without first holding the back of your hand near it. If you can feel the heat on the back of your hand, the container may be too hot to touch. It is always preferable to use tongs, heat resistant mittens or clamps when handling hot glassware.

Equipment Use:

- A. Operate laboratory equipment and instruments only after receiving proper instruction.
- B. Do not tamper with or modify equipment without authorization.

Laboratory Behavior:

- A. Conduct yourself in a responsible and respectful manner in the laboratory.
- B. Do not engage in pranks, horseplay, or unauthorized experiments.
- C. Do not interfere with other students' experiments or work.
- D. If a long term experiment is being run in the side of the lab, do not touch or interfere with it.

Emergency Procedures:

- A. All laboratory users should familiarize themselves with the location of emergency safety equipment and understand the proper usage procedures.
- B. In case of an emergency, users are encouraged to notify laboratory staff immediately and use emergency facilities as needed.
- C. In case of fire or other emergencies, follow evacuation protocols calmly and promptly.
- D. Report all accidents, no matter how minor, to your teacher immediately.
- E. Learn what to do in case of specific accidents such as getting acid in your eyes.
- F. Know the location of the fire extinguisher.

Waste Disposal:

- A. Dispose of chemical waste and hazardous materials as instructed by the teacher.
- B. Do not dispose of any solid waste down the sinks.
- C. Do not dispose of chemicals in regular trash bins.

End of Experiment Rules:

- A. When an experiment is completed, clean up your work area and return all equipment to its proper place.
- B. Wash your hands after every experiment.
- C. Make sure the laboratory is clean and tidy at the end of the lesson, this includes but is not limited to: picking up paper scraps, drying the benches, making sure the gas taps are closed (even if they don't have gas) and the chairs are placed under the tables.

Supervision:

- A. Students are always under the direct supervision of the teacher while in the laboratory.
- B. The teacher is responsible for ensuring safety protocols.

Laboratory Incident Response Protocol:

- A. If an accident occurs, cease all activities and call for assistance from the teacher immediately.
- B. Attend to any injured individuals, providing basic first aid if trained to do so.
- C. Evacuate the immediate area if necessary, following established evacuation routes.
- D. Report the incident promptly to the teacher, providing details of what transpired.
- E. If emergency services are required, call for assistance using the designated emergency number.
- F. Complete an incident report form, detailing the nature of the incident, individuals involved, and any actions taken.
- G. Include photographs if possible and gather witness statements if applicable.
- H. Based on the severity of the incident, the teacher may decide on appropriate follow-up actions, such as involving medical professionals, contacting parents, or implementing additional safety measures.
- I. Conduct a thorough review of the incident to identify contributing factors and prevent similar occurrences in the future.
- J. Implement any necessary adjustments to laboratory procedures or safety protocols.

Consequences:

- A. Failure to adhere to laboratory safety procedures may result in restricted access to laboratory facilities or other appropriate consequences.
- B. Serious breaches of safety may lead to disciplinary action.
- C. Putting yourself or others at risk on purpose will immediately grant a referral to the discipline committee.

Maintenance of Laboratory Equipment:

- A. Eyewash stations and emergency showers are strategically located within the laboratory and should be clearly marked for immediate identification.
- B. Adequately stocked first aid kits are positioned in easily accessible locations throughout the laboratory. These kits contain essential supplies to address minor injuries or provide initial care until professional medical assistance can be sought.
- C. Fire extinguishers are strategically placed and clearly marked. Regular checks on their operational status should be conducted, and any damaged or expired extinguishers must be promptly replaced.

- D. Emergency showers and eye washers should be open at least twice a year in order to purge them from any residue deposited in the pipes. This will be done by the laboratory assistant at times when the laboratories are not in use.
- E. Regular inspections of first aid kits will be conducted to verify the integrity of supplies and replenish items as needed. Any expired medications or sterile items will be promptly replaced.
- F. Routine checks on fire extinguishers will be carried out to confirm their operational status. This includes verifying pressure levels, checking for visible damage, and ensuring that all safety seals are intact.
- G. Laboratory assistants are responsible for coordinating and conducting scheduled maintenance activities on emergency safety equipment.
- H. Any identified issues or deficiencies during maintenance checks must be reported to the appropriate authorities for immediate resolution.
- I. All chemicals must be stored in designated areas with clear labels indicating their names, hazard classifications, and storage requirements.
- J. Segregate incompatible chemicals to prevent potential reactions. Follow established guidelines for the storage of flammable, corrosive, and reactive substances.
- K. Designate specific personnel responsible for routine inspections of the chemical inventory. This may include laboratory assistants or designated staff members.
- L. Conduct regular checks to ensure that all chemicals are properly sealed, and containers are free from leaks or damage.
- M. Regularly inspect the chemical inventory to identify and segregate expired or nearing-expiration chemicals.
- N. Fire extinguishers will be checked by monthly visual inspections, Annual professional maintenance check, Extended inspections and maintenance in every 5 years.
- O. Monthly inspections include : - Inspect the extinguisher for any visible signs of damage or corrosion.
 - Check that the extinguisher is in its designated place and not obstructed.
 - Verify the pressure gauge shows the needle in the operable range (green zone).
 - Ensure the safety pin is intact and the tamper seal is unbroken.
 - Record the inspection date on the tag attached to the extinguisher.
- P. Annual Professional maintenance check includes: - Conduct a thorough check by a certified professional.
 - Examine all mechanical parts, the hose, nozzle, and the extinguisher's body for damage or wear.
 - Check the weight and pressure of the extinguisher to ensure it conforms to the manufacturer's standards.
 - Replace any parts as necessary and refill if the extinguishing agent is below the recommended level.
 - Update the maintenance tag to record the professional inspection.
- Q. Extended inspections and maintenance in every 5 years: - Every 5 years (depending on the type of extinguisher),
 - perform extended maintenance including emptying, refilling, or hydrostatic testing of the canister.
 - Follow the manufacturer's guidelines for specific maintenance schedules based on extinguisher type.
- R. Post-Usage Procedure: - Inspect and recharge the extinguisher immediately after any level of use.
 - Check for any damage incurred during use and repair or replace if necessary.
- S. Documentation and Record Keeping: - Maintain a log of all inspections, maintenance, and servicing activities.
 - Keep records accessible for review by safety inspectors or during audits.

- T. Training and Familiarization: - Ensure that staff or building occupants are trained in the correct use of fire extinguishers.
- Conduct regular drills and training sessions to familiarize everyone with the location and operation of the extinguishers.

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