

# Al Ittihad National Private School Al Ain



## Science Laboratory Policy AY 2024-2025

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## I. Introduction

The Science Laboratory Policy aims to ensure a safe, efficient, and well-organized environment for conducting experiments and fostering hands-on learning in science subjects. This policy is aligned with the Health and Safety requirements, with particular focus on maintaining safety standards and appropriate handling of resources, chemicals, and equipment.

## II. Aim

To create a safe and organized space for science teaching and experimentation, ensuring adherence to safety protocols, effective management of resources, and continuous improvement of laboratory operations.

## III. Objectives

- Promote a safe environment for science experiments.
- Ensure all stakeholders understand and follow laboratory protocols.
- Maintain equipment and manage resources efficiently.
- Ensure compliance with health and safety regulations.
- Ensure the safety of students, staff, and visitors.
- Provide guidelines for the safe handling, storage, and disposal of chemicals.
- Establish procedures for the proper use and maintenance of laboratory equipment.
- Implement emergency procedures for incidents and accidents in the laboratory.

## IV. Purpose

To minimize risks associated with laboratory activities by providing clear procedures and responsibilities for staff, students, and laboratory technicians.

## V. Guidelines

### 5.1. Guidelines for Lab Technician

- 5.1.1. Preparation: Prepare all materials for classes and maintain an inventory of chemicals and equipment.
- 5.1.2. Chemical Storage: Ensure chemicals are stored safely according to their hazard classification, keeping incompatible chemicals separate.
- 5.1.3. Safety Equipment: Regularly check the status of eye washing stations, first aid kits, fire extinguishers, and fume cupboards.
- 5.1.4. Hazardous Waste Management: Follow the established protocol for handling, labelling, and disposing of chemical waste.
- 5.1.5. Inventory Review: Maintain and update an inventory sheet, review expiry dates of chemicals, and ensure that outdated substances are disposed of safely.

### 5.2. Guidelines for Teachers

- 5.2.1. Lab Log: Record each use of the laboratory in a logbook, noting materials used and safety precautions followed (Appendix A and B).
- 5.2.2. Preparation: Inform lab technicians of materials required ahead of lessons, including any special equipment.
- 5.2.3. Safety: Ensure students are aware of all safety rules before conducting experiments. Teachers should model the use of personal protective equipment (PPE).
- 5.2.4. Emergency Readiness: Be prepared to manage accidents like spills, fires, or injuries using emergency response procedures.

### 5.3. Guidelines for Students

5.3.1. Safety Rules: Follow all safety rules and procedures, wear protective gear, and handle all chemicals and equipment under the guidance of a teacher.

5.3.2. Behavior: Behave responsibly; no running is allowed in the lab.

5.3.3. Entering and Leaving: Enter the lab only with permission and under supervision. Ensure the workstation is clean before leaving.

## VI. Arrangement of the Laboratory

- Workstations: Set up workstations to avoid overcrowding and provide sufficient space for movement.
- Storage: Keep all equipment and glassware in designated, labeled cabinets. Ensure heavy items are stored at a safe height.
- Chemical Storage: Chemicals must be stored based on their classification—flammables, corrosives, oxidizers – in appropriate cabinets. Labels should be clear, stating the name, concentration, and hazards.

## VII. Safety Measures for Hazardous Chemicals

- Chemical Storage: Store chemicals according to their health hazards, such as flammable, corrosive, or toxic, in specialized, ventilated cabinets.
- Hazardous Waste Management:
  - Chemical Waste Disposal: Dispose of chemicals in accordance with UAE regulations. Specific containers for different types of waste must be used.
  - General Lab Waste Disposal: Non-hazardous lab waste should be separated from hazardous waste for disposal.

## VIII. Inventory and Equipment Management

- Glassware and Equipment Storage: All glassware must be stored separately, with labels indicating fragility. Equipment must be stored in its designated location after use.

- Review of Expiry Dates: Check chemicals for expiry dates every three months. Outdated chemicals must be logged and disposed of properly.
- Lab Log for Teachers: Teachers must log every session, including materials used, and any incidents or equipment malfunctions (Appendix A and B).

## IX. Laboratory Resources and Equipment

- Fume Cupboards: Ensure fume cupboards are checked regularly and properly maintained.
- PPE: Provide PPE like lab coats, gloves, and safety goggles, which must be used by everyone in the lab.
- Manual Handling: Heavy or hazardous materials should be handled by trained staff, using appropriate equipment like trolleys.

## X. Emergency Procedures

- Fire: Use fire extinguishers or fire blankets. Follow the evacuation procedure.
- Chemical Spills: Follow spill control procedures—use spill kits for different types of chemicals.
- Injury: Provide first aid, and report injuries immediately. Chemical splashes in the eyes or on the skin require immediate flushing with water.
- Reporting Procedures:
  - Chemical Splash (Eyes/Skin): Flush immediately with water and seek medical attention.
  - Burns: Rinse under cool running water and follow the emergency plan.

## XI. Safety Rules

- For Students: No eating or drinking in the lab. Always wear PPE and follow teachers' instructions.
- For Teachers: Always ensure proper supervision and conduct regular checks for hazards before and after class.

## XII. Maintenance of Equipment

- **Regular Checks:** The lab technician must conduct regular checks on the condition of equipment (e.g., eye wash stations, first aid kits, fire extinguishers).
- **Device Maintenance:** Record maintenance activities and ensure all devices are functioning properly before lab use.

## XIII. Procedures for Entering and Leaving the Laboratory

- **For Teachers and Students:** Ensure hands are washed, all equipment is returned, and workstations are clean. Leave the laboratory only after the teacher gives permission.

## XIV. Resource Request Procedure

- **For Teachers:** Requests for lab resources should be submitted to the lab technician at least three days before the planned session.

## XV. Storing Models, Slides, and Equipment

- **Physics, Chemistry, and Biology:**
  - **Models** must be stored in a designated area that maintains stability and safety.
  - **Biology Slides:** Store in a dry, organized box to prevent damage.
  - **Chemistry and Physics Equipment:** Equipment must be stored according to usage frequency, with fragile items clearly labeled.

## XVI. Laboratory Environment

- **Temperature Maintenance:** The lab temperature should be monitored to ensure it is within the safe range for chemical storage and comfort.
- **Cabinet Labeling:** Cabinets should be labeled with contents and hazard information, following UAE standards for safety and clarity.

## XVII. Roles and Responsibilities

### 17.1. Students

17.1.1. Follow Safety Rules: Adhere strictly to all laboratory safety rules and protocols, including wearing the required personal protective equipment (PPE) such as lab coats, gloves, and safety goggles.

17.1.2. Responsible Behavior: Act responsibly, avoid running or engaging in horseplay. Follow instructions given by teachers or lab technicians.

17.1.3. Use of Equipment: Use all laboratory equipment and materials as instructed. Report any malfunctions or breakages immediately to the supervising teacher.

17.1.4. Emergency Awareness: Know the location of safety equipment such as fire extinguishers, first aid kits, and eye wash stations.

17.1.5. Entering and Leaving: Enter the laboratory only when instructed and under supervision. Ensure that all work areas are clean before leaving, with equipment returned to its proper place.

### 17.2. Lab Technician

17.2.1. Preparation and Setup: Prepare all equipment, chemicals, and materials as required by the teachers for lessons or experiments.

17.2.2. Inventory Management: Maintain an updated inventory of chemicals, equipment, and other laboratory supplies. Review expiry dates of chemicals regularly and ensure proper disposal of expired substances.

17.2.3. Safety Equipment Maintenance: Regularly inspect and maintain safety equipment such as eye wash stations, first aid kits, fire extinguishers, and fume cupboards.

17.2.4. Hazardous Waste Management: Ensure proper handling, labelling, and disposal of chemical waste in line with UAE regulations.

17.2.5. Storage: Arrange for proper storage of chemicals, glassware, and equipment, ensuring labels are clear and items are stored in designated locations.



### **17.3. Teachers**

17.3.1. Safety Promotion: Educate students on laboratory safety rules before conducting experiments, and ensure they wear appropriate PPE.

17.3.2. Laboratory Supervision: Always supervise students during laboratory activities to ensure compliance with safety protocols.

17.3.3. Lab Log: Maintain a laboratory log documenting experiments, materials used, safety precautions taken, and any incidents or malfunctions.

17.3.4. Emergency Preparedness: Be familiar with all emergency procedures and ensure students are aware of what to do in case of incidents such as fires, chemical spills, or injuries.

17.3.5. Resource Requests: Submit requests for laboratory resources and materials to the lab technician well in advance of lessons.

### **17.4. Health and Safety Officer**

17.4.1. Policy Compliance: Ensure the laboratory complies with all health and safety regulations as per ADEK's guidelines. Conduct regular audits of laboratory practices.

17.4.2. Training and Awareness: Provide health and safety training to laboratory staff and students. Ensure emergency procedures are well communicated and practiced.

17.4.3. Incident Reporting and Follow-Up: Oversee the documentation of any laboratory incidents and ensure appropriate measures are taken to prevent recurrence.

17.4.4. Risk Assessment: Conduct risk assessments for laboratory activities, ensuring hazards are identified, and appropriate control measures are in place.

17.4.5. Review Procedures: Regularly review laboratory policies, procedures, and safety measures, updating them in alignment with changes in health and safety regulations.

## Appendix A – Science Laboratory Booking Log – Middle & High School

The lab log is to be created digitally via a *Google Form* to streamline the process of booking the science laboratory. This approach ensures accurate record-keeping, avoids scheduling conflicts, and allows the laboratory technician to prepare resources effectively.

- The following information is to be included in the Google Form:

Title of the Form:	Science Laboratory Booking Log – Middle & High School
Introduction:	This lab log serves as a formal record for booking the Science Laboratory. It ensures that the lab technician is informed in advance about the upcoming experiments and can prepare the necessary equipment, glassware, chemicals, and other specific requirements. Please complete all fields <i>ONE WEEK IN ADVANCE</i> to guarantee smooth laboratory operations and adequate preparation for all science activities.
All items below are <i>Mandatory</i> .	
Teacher Name:	The teacher is to type his/her Full Name
Subject:	Dropdown list (Middle School Science, Chemistry, Biology, Physics, Environmental Science)
Date & Day:	The teacher is to select the Date & Day
Lesson Number:	Dropdown List (Lesson 1, Lesson 2, Lesson 3, Lesson 4, Lesson 5, Lesson 6, Lesson 7, Lesson 8)
Grade:	Dropdown list (G06, G07, G08, G09, G10, G11, G12)
Section (Class):	The teacher is to type the Name of the Section
Laboratory Name & Number:	The teacher is to insert the name of the lab and its number as per the Curriculum Document
Type of Laboratory:	Dropdown List (Demo-by the Teacher or Hands-on)
Equipment Needed:	The teacher is to type all the equipment needed (if any) If there is no equipment needed, the teacher is to type NA.
Glassware Needed:	The teacher is to type all the glassware needed (if any) If there is no glassware needed, the teacher is to type NA.
Chemical Needed:	The teacher is to type all the chemicals needed (if any) If there are no chemicals needed, the teacher is to type NA.
Special Requirements / Set-up:	The teacher is to list the type of set-up needed for the experiment to be conducted.

## Appendix B – Science Laboratory Booking Log – Elementary School

The lab log is to be created digitally via a *Google Form* to streamline the process of booking the science laboratory. This approach ensures accurate record-keeping, avoids scheduling conflicts, and allows the laboratory technician to prepare resources effectively.

- The following information is to be included in the Google Form:

Title of the Form:	Science Laboratory Booking Log – Elementary
Introduction:	<p>This lab log serves as a formal record for booking the Science Laboratory. It ensures that the lab technician is informed in advance about the upcoming experiments and can prepare the necessary equipment, glassware, chemicals, and other specific requirements.</p> <p>Please complete all fields <i>ONE WEEK IN ADVANCE</i> to guarantee smooth laboratory operations and adequate preparation for all science activities.</p>
All items below are <i>Mandatory</i> .	
Teacher Name:	The teacher is to type his/her Full Name
Date & Day:	The teacher is to select the Date & Day
Lesson Number:	Dropdown List (Lesson 1, Lesson 2, Lesson 3, Lesson 4, Lesson 5, Lesson 6, Lesson 7, Lesson 8)
Grade:	Dropdown list (G01, G02, G03, G04, G05)
Section (Class):	The teacher is to type the Name of the Section
Laboratory Name & Number:	The teacher is to insert the name of the lab and its number as per the Curriculum Document
Type of Laboratory:	Dropdown List (Demo-by the Teacher or Hands-on)
Equipment Needed:	The teacher is to type all the equipment needed (if any) If there is no equipment needed, the teacher is to type NA.
Glassware Needed:	The teacher is to type all the glassware needed (if any) If there is no glassware needed, the teacher is to type NA.
Chemical Needed:	The teacher is to type all the chemicals needed (if any) If there are no chemicals needed, the teacher is to type NA.
Special Requirements / Set-up:	The teacher is to list the type of set-up needed for the experiment to be conducted.

## XVIII. Disclaimer

### Disclaimer

This policy was developed by Al Ittihad National Private School Al Ain. It is intended for use exclusively by school staff and students. Any external use, whether in whole or in part, requires management approval. Any exceptions to this policy must also be approved in advance by the school management.

Science Laboratory Policy

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