



SAFETY AND SCIENCE

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SAFETY AND SCIENCE

- A science/pūtaiao programme has certain potential risks. Yet, with careful planning, most risks can be managed. It is essential for all involved in science teaching and learning to develop a positive approach to a safe and healthy environment in the laboratory. Health and safety in science classrooms and laboratories is the responsibility of the board of trustees, principals/tumuaki, teachers/kaiako, technicians/taiwhanga/kaimahi, and students/ākonga each assuming their roles and responsibilities. Health and safety should be an integral part of planning, preparing, implementing, and reviewing any science programme.
- This document provides information and guidance to teachers and technicians to support them in developing a culture of safety and to ensure the safety of students, staff and others in schools.





SAFETY AND SCIENCE

Teachers need to lead by example so that students learn that safe procedures are part of the way science must be done. This includes:

- wearing personal protective clothing and equipment
- o following and enforcing safety rules, procedures, and practices
- demonstrating safety behaviour and promoting a culture of safety
- o being proactive in every aspect of laboratory safety, making health and safety a priority.







There are other hazardous substance environmental and disposal rules set under the Resource Management Act and local council bylaws. These rules are enforced by local, district and regional councils, councils.

Can you afford a \$600K fine?

SAFETY AND SCIENCE – WHO IS RESPONSIBLE?

[&]quot; Such as labelling, packaging, safety data sheets and restrictions on ingredients in certain hazardous substances products.

⁻ City and district councils





SAFETY AND SCIENCE – How is the laboratory manager appointed?

The PCBU must ensure that at least one person is designated as a laboratory manager and record the terms and conditions of the designations in writing, including specifying the areas under the control of the laboratory manager(s).

It is essential that the laboratory manager has the support of the SLT and HoD (if they are not the HoD) as they are managing overall safety and effectively supervising other staff in respect to safety in the laboratory.









SAFETY AND SCIENCE – How is the laboratory manager appointed?

8. I What are the skills and knowledge required for laboratory managers?

The PCBU must ensure that the laboratory manager has:

- technical knowledge of the physical and chemical properties of all substances managed or used in the laboratory, including the likely hazardous properties of substances being synthesised, to prevent or manage the adverse effects of those substances
- knowledge of:
 - precautions for handling the hazardous substances
 - disposal requirements
 - any relevant safe work instrument (there is nothing currently relevant to school labs)
- the knowledge and skill to implement the requirements of the laboratory emergency plan
- the knowledge to demonstrate the correct operation of equipment including PPE to manage the hazardous substances
- knowledge of the relevant legislation particularly HSWA, HSR, Disposal regulations







SAFETY AND SCIENCE – WHO IS RESPONSIBLE?

NAG 5

Each Board of Trustees is required to:

- provide a safe physical and emotional environment for students;
- comply in full with any legislation currently in force or that may be developed to ensure the safety of students and employees.

Boards of trustees should have policies and practices in place to ensure the health and safety of staff and students involved in science activities.







SAFETY AND SCIENCE – WHO IS RESPONSIBLE?

7.4.1 Upkeep of a laboratory/taiwhanga and equipment

- Conduct regular inspections of safety and first-aid equipment as often as requested by the laboratory manager.
- Notify the laboratory manager, in writing, if a hazardous or possibly hazardous condition (for example, malfunctioning safety equipment or chemical hazard) is identified in the laboratory and follow through on the status.
- Never use defective equipment.









Has your BoT appointed a laboratory manager?

Do you have an emergency response plan?







SAFETY AND SCIENCE – SIGNAGE

 All entrances to the laboratory (which may be a building or an individual room) must be clearly marked with the following (or similar) sign:

14.1 What to put on the sign

- The sign should be bilingual where at all possible:
- be in English and te reo Māori or pictograms
- o be readily understandable
- not use abbreviations and acronyms unless they are in common English or te reo Māori usage and the term described by the abbreviation or
- o acronym is used at least once on the signage
- be clearly visible and legible at a distance of not less than 10 m under varying conditions (for example, rain or poor light)
- be made of materials that are durable, resistant to sunlight and require minimal maintenance.



Entry for Authorised Persons Only









SAFETY AND SCIENCE - SIGNAGE

25.2 Labels on secondary containers and prepared solutions

Sodium Hydroxide 2 mol L⁻¹ NaOH



DANGER—Harmful if swallowed. May be corrosive to metals. Causes severe skin burns and eye damage. Wear safety glasses.







SAFETY AND SCIENCE – SAFETY REQUIREMENTS

26 What are the basic safety requirements?

Basic safety requirements include:

- safety documentation for all laboratories covering:
 - Inventory of hazardous substances in the laboratory
 - Site plan
 - Safe operating procedures (SOPs) and safe methods of use (SMUs)
 - Personal protective equipment (PPE) and respiratory protective equipment (RPE) guidelines/procedures (including ways to determine what PPE/RPE should be worn)
 - Emergency response plans
 - o Any operations in the worker's work area where hazardous substances are present; and
 - The location and availability of known reference material on the hazards, safe handling, and storage of the hazardous substances found in the workplace, including (without limitation) safety data sheets (SDSs).







SAFETY AND SCIENCE – SAFETY REQUIREMENTS

26 What are the basic safety requirements?

- a safety site-specific induction programme for all authorised persons before starting work in the laboratory, and ongoing training including refresher training, supervision and instruction where relevant.
- records of training and instruction provided kept.







SAFETY AND SCIENCE – FOOD AND DRINK IN A LABORATORY

- The intention of the Safety and Science document is that no food or drink is consumed in a laboratory.
- If you have a learning activity that involves food or drink, then find an appropriate space to complete this.
- Drink bottles should not be in a laboratory.







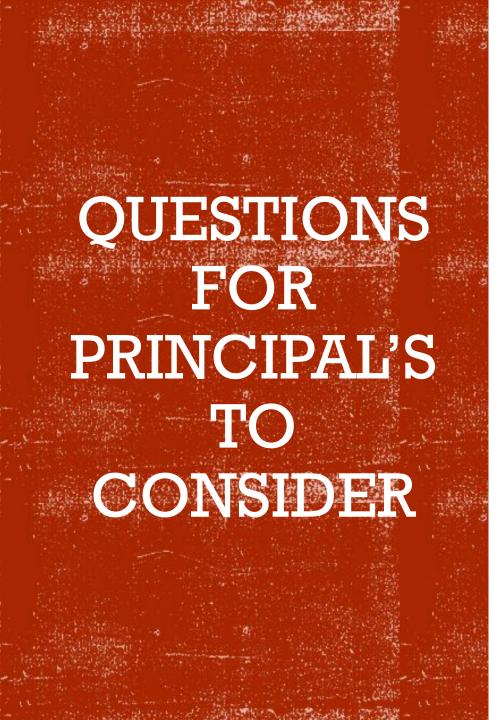
SAFETY AND SCIENCE – SUBSTANCES

Appendix 4 –
Substances
prohibited for use
in schools/kura

Appendix 5
–Substances with greater hazardous nature than educational utility

Appendix 6 – Substances with a hazardous nature, but with potential educational utility









- Have you had a conversation with your Laboratory Manager and Science Technician about what changes they had implemented because of reading Safety and Science?
- Has the Board of Trustees formally appointed a laboratory manager?
- How many teachers do you have that don't take their H&S responsibilities seriously? How are you supporting the laboratory manager to change their behaviour?
- How are your Science staff carrying out risk assessments of experiments?
- What are steps that you can take to improve Health and Safety in your school?







Ask them now!

Think of them later – then send an email to nzase@xtra.co.nz

Questions will be shared via STANZ and NZASE newsletters