



Science Health & Safety Manual



LONGRIDGE TOWERS SCHOOL

SCIENCE DEPARTMENT HEALTH & SAFETY POLICY

Policy written 1.9.09
Last reviewed 30.9.10

1. The role of this policy

This *Science Department Health & Safety Policy* should be read in conjunction with the employer's general Health & Safety Policy. The purpose of this document is to record the arrangements made in the Science Department to implement the policy.

This document is maintained by the Science Department. It is copied to all new members of staff, i.e., teachers, technicians, trainees, etc working in the department. A reference copy, together with various Appendices, is kept in the Science Department Handbook for consultation by staff and for inspection by visiting HSE inspectors or a representative of the employer. A copy of this document has been lodged with the Bursar and another passed to the employer for endorsement.

2. General aims

Science teaching has an excellent health & safety record and this department is keen to promote practical work as an essential component of good science teaching. It is determined that spurious concerns about health and safety should not be allowed to inhibit good teaching. However, it is the duty of all members of the science staff, i.e., teachers, staff who work in the department occasionally, technicians and other support staff and trainees:

- to take reasonable care for the health and safety of themselves and other persons who may be affected by their acts or omissions during work;
- to be familiar with this health & safety policy by periodic reference to it;
- to look out for any revisions;
- to follow its provisions, and
- to cooperate with other members of staff in promoting health and safety.

3. Health and safety roles

3.1 Duties, functions and tasks

The employer, Longridge Towers School, has the ultimate duty to ensure the health and safety of employees and others on the site (and hence in this department).

This employer has not currently issued any local instructions specific to Science.

The task of overseeing health and safety on this site has been delegated by the employer to the Bursar. Within the Science Department, this task is further delegated to the Head of Science who has the particular function of maintaining this policy document. See section 10 for the names of the staff members currently with these functions.

This policy is reviewed annually during the Michaelmas term.

3.2 Communications

It is acknowledged that communication of health & safety information is of the greatest importance and is the task of the Head of Science with the assistance of subject specialists.

In this department, all staff are issued with this policy. A reference copy is kept in the Science Department Handbook together with any Appendices.

Any new instructions, restrictions or rescinded (lifted) restrictions made by the employer are communicated to all staff in writing as well as being attached to the reference copy of this policy.

3.3 Monitoring and checking

The employer expects the Science Department to monitor the implementation of this policy. Records of monitoring are kept by the Head of Science.

Checklists on resources and facilities for daily / weekly / termly / annual use by technicians are customised from those suggested in CLEAPSS Guide L248 *Running a Prep Room*. The timetable for such checks is kept with the reference copy of this policy. Records of the checks are kept by the Head of Science with the assistance of the Science Technician in the Science Department Handbook.

4. Training policy

The person with the task of seeing that training is provided is the Head of Science overseen by the CPD Coordinator and Bursar.

Generally, this department follows guidance in the CLEAPSS documents L238, *Health and Safety Induction and Training of Science Teachers* and L234, *Induction and Training of Science Technicians*, suitably customised, to identify the training needs of staff.

Particular training functions are delegated as follows (to be read in conjunction with section 10).

Health & safety aspects of the work of newly-qualified teachers and other new teachers	The Head of Science with the assistance of appropriate subject specialist.
Health and safety of trainees on teaching practice	The Head of Science with the assistance of appropriate subject specialist.
Induction of newly-appointed technicians	The Head of Science.
Immediate remedial measures and other emergency procedures (spills, bench fires, etc)	The Head of Science.
Training in the use of specialist equipment, chemicals or procedures (in line with CLEAPSS guides L238 and L234, as customised)	The Head of Science with the assistance of appropriate subject specialist.
Health & safety training of non-science support staff	The Head of Science.
Health and safety of non-science teachers using laboratories	The Head of Science.
Manual handling for all staff using laboratories	The Bursar.
Healthy and safe procedures for laboratory cleaners	The Head of Science.
Regular update training (covering new or changed regulations, new equipment etc)	The Head of Science.

Records of the training received by members of the science staff are kept by the Deputy Head.

5. Risk assessments

Every employer is required under various regulations¹ to supply employees with a risk assessment before any hazardous activity takes place. (Common hazardous activities carried out in Science Departments are listed in the publications below.) Because it is impracticable for the employer to write risk assessments for each of the many activities in school science, this employer follows the recommendation of the Health and Safety Commission to adopt published 'model' or 'general' risk assessments which school science departments adapt to their local circumstances.

The employer has endorsed the use of the following publications as sources of model (general) risk assessments.

CLEAPSS² publications generally
CLEAPSS, *Hazcards*, current edition
CLEAPSS, *Laboratory Handbook*, current edition
CLEAPSS, *Recipe Cards*, current edition
CLEAPSS, L93, *Managing Ionising Radiations and Radioactive Substances*
ASE, *Safeguards in the School Laboratory*, ASE, 2006 (11th Edition), ISBN 978-0-86357-408-5
ASE, *Topics in Safety*, ASE, 2001 (3rd edition), ISBN 0863573169
DfEE, *Safety in Science Education*, HMSO, 1996, ISBN 011270915X

Whenever a new course is adopted or developed, all activities (including preparation and clearing-up work) are checked against the model risk assessments and significant findings are incorporated into texts in daily use, i.e., the scheme of work. See section 10 for the member of staff with the task of overseeing this process³.

If a model risk assessment for a particular operation involving hazards cannot be found in these texts, a special risk assessment is obtained, following the employer's instructions, from CLEAPSS. In order to assess the risks adequately, the following information is collected.

- Details of the proposed activity.
- The age and ability of the persons likely to do it.
- Details of the room to be used, i.e., size, availability of services and whether or not the ventilation rate is good or poor.
- Any substance(s) possibly hazardous to health.
- The quantities of substances hazardous to health likely to be used, including the concentrations of any solutions.
- Class size.
- Any other relevant details, e.g., high voltages, heavy masses, etc.

Since the scheme of work has been checked against the model risk assessments, staff should deviate from it only if their proposed activities have been discussed with the appropriate subject specialist and agreed with the Head of Science.

We encourage the development of new practical activities (including on open days, at science clubs, etc) but these should be undertaken only after a prior check against model risk assessments and/or a special risk assessment has been obtained.

¹ Risk assessments are required by the *Control of Substances Hazardous to Health (COSHH) Regulations*, the *Management of Health & Safety at Work Regulations*, the *Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)* and others.

² Most CLEAPSS publications for secondary schools are on the CLEAPSS *Science Publications CD-ROM*. This is updated annually and issued, free of charge, to all member schools in December/January. Science departments are encouraged to mount it onto school networks and copy it onto stand-alone computers, laptops and teachers' home computers.

³ See CLEAPSS guide L196, *Managing Risk Assessment in Science* on the latest CLEAPSS *Science Publications CD-ROM*.

Where an activity must be restricted to those with special training, that restriction is included in a note on the text.

For technicians' activities in and around the prep room, the assessments in CLEAPSS publication PS25, *Model Risk Assessments for Laboratory Technician Activities* have been customised and form an Appendix to this document, kept in the Science Department Handbook.

6 Equipment and resources

6.1 Fume cupboards

The *COSHH Regulations* require the regular testing of fume cupboards (maximum interval 14 months) with a quick check before use. Testing normally takes place each year in July. The Site Manager has the function of seeing that this happens. The test is carried out by an inspector employed by the insurance company Royal and Sun Alliance who will be allowed access to carry out the tests. The records of the tests are available for staff reference and for inspection by the employer's representative or an HSE Inspector and kept by the Site Manager.

See section 10 for the names of the staff members currently with these functions.

All users have been trained to carry out a quick check that a fume cupboard is working before use.

No smoking of cigarettes is permitted in the school. However, **demonstrations of a 'smoking machine' are permitted in fume cupboards in designated laboratories.** The following laboratories, in which an efficient mobile fume cupboard could be used, are so designated: S21, S22, S23 and S25.

6.2 Electrical testing

To meet the requirements of the *Electricity at Work Regulations*, this employer requires portable electrical equipment to be inspected and tested regularly. The Site Manager has the function of seeing that this happens within the Science Department. Testing normally takes place each year in August.

This employer has arranged a contract with Norman Hargreaves. Completed schedules are kept by the Site Manager and are available for staff reference and for inspection by the employer's representative or an HSE Inspector.

See section 10 for the names of the staff members currently with these functions.

All users have been trained to carry out a quick visual inspection before using mains-powered equipment.

6.3 Radioactive sources

The employer's *Radiation Protection Adviser (RPA)* and the *Teacher in Charge of Radioactive Sources (Radiation Protection Supervisor, RPS)* are identified in section 10.

This school follows the guidance in CLEAPSS Guide L93 *Managing Ionising Radiations and Radioactive Sources* and the provisions of the *Radioactive Substances (Schools etc) Exemption Order 1963*.

The standard operating procedures for the use of radioactive sources have been adapted from the CLEAPSS model in consultation with the RPA and it is a function of the RPS to see that they are adhered to. Staff using ionising radiations have been issued with their own copies, as a part of their training, and a reference set is kept centrally with this policy in the Science Department Handbook.

The *Radioactive Sources History* (ie, authority to purchase, record of delivery, details of events in the life of the source and eventual certificate showing method of disposal) is kept in the Science Department Handbook.

The *Use Log* (showing the times that any sources are removed from and returned to their store) is kept in the prep room S24.

The *Monitoring Record* of tests for leakage of radioactive sources is kept in the Science Department Handbook. Testing normally takes place each year in December.

It is the function of the RPS to ensure these records are all kept up to date.

6.4 Pressure vessels

Autoclaves need periodic inspection under the *Pressure Systems Safety Regulations*. Inspection normally takes place each year in October.

In accordance with this employer's Code of Practice, the examination is carried out by an inspector employed by the insurance company Royal and Sun Alliance who uses a written scheme of examination provided by the company. Records of examinations are kept by the Site Manager.

6.5 Animals, plants and microorganisms in schools

The hazards associated with the use of animals, plants and microorganisms are discussed in the texts listed in section 5 which also give advice on controlling them. This advice will be followed and any queries referred to the subject specialist for Biology (see section 10).

6.6 Equipment safety

All staff selecting equipment for purchase will check that it is safe and suitable for the intended purpose (to comply with the *Provision and Use of Work Equipment Regulations*). Equipment listed by specialist educational equipment suppliers is taken to meet these *Regulations* but all other equipment is treated with caution and carefully assessed. Advice on safety and suitability is sought from CLEAPSS.

Offers of gifts of equipment are not accepted.

Equipment restricted to those users who have received special training (see section 4, *Training Policy*) is given warnings in texts in daily use.

Any user who discovers a hazardous defect in an item of equipment must report it to the Head of Science.

6.7 Personal protective equipment

The employer accepts the duty to provide eye protection, gloves and laboratory coats for employees where the risk assessment requires them (*Personal Protective Equipment at Work Regulations*). Laboratory coats are supplied by the employer and laundered by the school.

The employer expects eye protection to be available for students and visitors. Safety spectacles are provided for general use, with a set of goggles or face shields used whenever the risk assessment requires them.

The condition of the eye protection is checked regularly (see section 3.3, *Monitoring and checking*).

6.8 Chemicals

Offers of gifts of chemicals are not accepted.

The task of arranging safe storage of chemicals (and, where necessary, disposal), including highly-flammable liquids, in accordance with the requirements of the *Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)* is given to the Technician overseen by the Head of Science who will ensure that chemicals are stored securely, the risks of fire, explosion and spillage are minimised, labels are readable and that a spill kit is available and properly replenished.

See section 10 for the name of the staff member currently with this function.

Hazardous activities involving chemicals restricted to those who have received special training (see section 4, *Training policy*) are identified in the texts in daily use as part of the risk assessment (see section 5, *Risk assessments*).

6.9 Waste disposal

Waste chemicals and equipment are disposed of in an environmentally-responsible manner in accordance with relevant legislation. Chemical disposal follows guidance on *CLEAPSS Hazcards* (2007 edition or later). Other disposal follows guidance in the relevant section of the *CLEAPSS Laboratory Handbook*.

7 Activities and procedures

7.1 Outdoor activities

When planning any field trips etc, staff consult the employer's code of practice and the *CLEAPSS Laboratory Handbook*.

7.2 Manual handling and working at height

All regular operations involving lifting or carrying equipment, pushing trolleys, etc will be assessed to see if any may give rise to risks of injury (*Manual Handling Operations Regulations*) by a team consisting of the Head of Science, the Site Manager and the Bursar.

Occasional (i.e., one-off) manual-handling operations will be assessed by the staff member(s) before attempting them. Problems will be reported to the Head of Science.

See section 10 for the names of the staff members currently with these functions.

Following risk assessments under the *Work at Height Regulations*, when it is impossible to avoid storage or display above head height, glass or other fragile items are never stored above head height and only light-weight and rarely-used items are stored there. When displaying items at high level or fetching or replacing items stored at high level step ladders are used; staff never climb onto laboratory stools or benches.

7.3 Security

Access to laboratories and preparation rooms will be controlled to comply with the *Management of Health & Safety at Work Regulations*. All laboratories, the preparation room and store rooms are to be kept locked at all times except when in use. It is the task of the staff member leaving such a room to see that the room is empty and that the door is locked. No class is allowed to be in a laboratory without adequate supervision.

Any non-science staff who have to supervise any class in a laboratory will receive brief training in laboratory rules. The guidance for such staff is filed as an Appendix to this policy in the reference copy kept in the science area of the staff shared area laminated copies to give to such staff are kept in the prep room S24.

7.4 Concern for others

All science areas are made safe for cleaners or contractors to work in before these persons are allowed to proceed.

8. Emergency procedures

8.1 Fire

Science staff will follow the normal school procedures in case of major fires. All science staff are trained to deal with minor bench fires, clothing fires and hair fires. This training is supported by regular drills arranged by the Site Manager in consultation with the Headmaster. See section 10 for the name of the staff member currently with this function.

Advice on fire-fighting is given in sections 4 and 5 of the *CLEAPSS Laboratory Handbook*.

8.2 Spills

Trivial spills are dealt with using damp cloths or paper towels. Spills of any amount which do not give rise to significant quantities of toxic or highly-flammable fumes ('minor spills') are dealt with

by teachers or technical staff using a 'spill kit' prepared for this purpose in accordance with section 7 of the CLEAPSS *Laboratory Handbook*. The spill kit is kept in the prep room S24.

Major spills are those involving the escape of toxic gases and vapours or of flammable gases and vapours in significant concentrations. (Small amounts can be 'major spills' if spilt in small rooms.) Staff are trained in the appropriate procedures which may involve calling the Fire and Rescue Service. This training is supported by regular drills arranged by the Head of Science. See section 4 for the name of the staff member currently with this function.

8.3 Injury

Science staff will follow the normal school procedures in cases that require first aid. Science staff are trained to carry out immediate remedial measures after the accidents which occur in science (e.g., eye rinsing), while waiting for first aiders. See the most recent edition of the CLEAPSS *Laboratory Handbook* section 5. Instructions for immediate remedial measures are posted on the walls of all laboratories and the prep room.

See section 4 for the name of the person responsible for coordinating training in immediate remedial measures.

8.4 Reporting procedures

Injuries or suspected injuries to a pupil or a member of staff, dangerous occurrences and instances of damage or theft will be reported using the standard school procedures. Following an injury, so that the Regulations (*RIDDOR*) can be complied with, the accident must be reported to Matron as quickly as possible, using the Pupil Accident Book.

Dangerous situations and incidents which might have resulted in injury ('near-misses') should be reported to the Head of Science in writing. These will be analysed and discussed at departmental meetings.

9. Laboratory rules for students

The rules for students during science lessons are as follows.

Laboratory Rules

The biggest danger in the lab is **YOU!** You are at risk when you don't understand the hazards or you are careless, or both. The person most likely to suffer from your mistakes is **YOU!** Report any accident or breakage to your teacher.

1. Only enter a lab when told to do so by a teacher. Never rush about or throw things in the lab. Keep your bench and floor area clear, with bags and blazers well out of the way.
2. Follow instructions precisely; check bottle labels carefully and keep tops on bottles except when pouring liquids from them; only touch or use equipment and materials when told to do so by a teacher; never remove anything from the lab without permission.
3. Wear eye protection when told to do so and keep it on from the very start until all practical work is finished and cleared away.
4. When using naked flames (e.g., Bunsen or spirit burners or candles), make sure that ties, hair, baggy clothing etc are tied back or tucked away.
5. Always stand up when working with hazardous substances or when heating things so you can quickly move out of the way if you need to.
6. Never taste anything or put anything in your mouth in the laboratory. If you get something in your mouth, spit it out at once and wash your mouth out with lots of water. Tell your teacher.
7. Always wash your hands carefully after handling chemicals, microbes or animal and plant material.
8. If you are burnt or a chemical splashes on your skin, wash the affected part at once with lots of water. Tell your teacher.
9. Never put waste solids in the sink. Put them in the bin unless your teacher instructs you otherwise.
10. Wipe up all small spills and report bigger ones to your teacher.

10. Staff roles and Emergency contacts

Staff roles

Staff roles and/or emergency contacts updated on: 3 rd September 2009	
Advice on health & safety and all aspects of practical science generally	CLEAPSS Helpline 01895 251496
Overseeing health and safety in this school	The Bursar Stuart Bankier
Overseeing health and safety in the Science Department	Head of Science Julia Masey
Technician	Walter Curtis
Various training functions	See table in section 4.
Subject specialist for consultation over health & safety matters in biology	Christina Krzysiak
Subject specialist for consultation over health & safety matters in chemistry	Julia Masey/Katie Rudge
Subject specialist for consultation over health & safety matters in physics	Scott Spence
Overseeing the checking of activities against the model risk assessments and recording significant findings	Head of Science Julia Masey
Detailed checking of activities is further delegated by courses and year groups	Biology Christina Krzysiak Chemistry Julia Masey/Katie Rudge Physics Scott Spence Forms 1 and 2 Katie Rudge
The person trained to test fume cupboards	The schools insurers Royal and Sun Alliance
The person trained to do electrical inspection and testing	Norman Hargreaves Registered Electrical Contractors
The teacher in charge of radioactive sources (Radiation Protection Supervisor, RPS)	Julia Masey
The employer's Radiation Protection Adviser, RPA	AMEC Nuclear UK Limited
The person considered competent to examine pressure vessels	The schools insurers Royal and Sun Alliance
The person in charge of chemical storage and disposal	The Technician Walter Curtis
The person in charge of manual handling	The Bursar Stuart Bankier

Emergency contacts

Emergency advice	CLEAPSS Helpline 01895 251496
<i>Serious accident:</i> Ambulance service	9-999
<i>Serious accident:</i> School first-aiders	Julia Masey, Philip McParland, Walter Curtis (also see list in each laboratory).
<i>Serious accident:</i> School health & safety officer	The Bursar Stuart Bankier
<i>Major chemical spill:</i> Fire & Rescue Service Chemical Incident Unit	Northumbria Fire and Rescue Control Room tel 01670 534662
<i>Gas leak:</i> (there is no mains gas)	The Site Manager Lawrence Caldwell ext 227
<i>Radiation accident:</i> Hospital able to deal with radiation incidents	Newcastle General Hospital 0191 233 6161
<i>Radiation accident:</i> Employer's RPA	AMEC Nuclear UK Limited tel. 01925 675331

Summary guidelines for staff

All teachers, technicians and support staff

1. Teachers and technicians have a general duty to take reasonable care for the health and safety of themselves, of other members of staff and of pupils. They have specific duties: to be familiar with this health and safety policy, its updates, the texts to which it refers and any Appendices. They must cooperate with the employer's instructions, observe the requirements of this policy and fulfil any special responsibilities it gives them. They must cooperate with colleagues in their specific health & safety duties. They have a duty to report to local management any failure of equipment that has a health & safety function.
2. Staff practice must set a good example to pupils and be consistent with pupil laboratory rules, e.g., over the wearing of eye protection.
3. Staff must be familiar with emergency drills and with the location in each science room of: the escape route; fire-fighting equipment; the water tap with tubing for eye washing; the main gas cock; the main electricity switch and the nearest spill kit.
4. Laboratories must be left safe. Special arrangements must be made for equipment which has to be left running overnight and hazardous equipment which has to be left out. In general, all gas taps should be completely turned off and all mains-operated apparatus switched off. At the end of the day gas should also be turned off at the laboratory main gas cock.
5. Eating, drinking and the application of cosmetics should not take place in laboratories, storage areas or preparation rooms unless an area in which it is safe to do so has been created. Pupils should not be allowed to drink from water bottles.
6. When staff are alone in the Science Department, nothing should be done which could lead to an accident requiring remedial measures. A teacher or technician must assess risks very carefully before conducting any practical operation in such circumstances.
7. In general, pupils must not be left unsupervised in a laboratory. Staff needing to leave a class briefly must assess the risks of doing so, perhaps arranging for temporary supervision by a neighbouring member of staff. Special arrangements may be needed for senior students doing project work, depending on the hazards involved, e.g., an experienced member of staff in an adjacent room.
8. Science laboratories, preparation rooms and stores must be locked by staff when not in use. Pupils must never be allowed into preparation rooms unless 100% supervision can be guaranteed. Laboratories must only be used by teachers who are not scientists for teaching or registration if the laboratories have been specially cleared.

Teachers

1. At the beginning of each school year, teachers must make sure that their classes have copies of the student laboratory rules [see section 10] and issue them if necessary. They should be stuck into an exercise book, work folder or similar place.
2. Teachers must enforce the student laboratory rules, reminding students of them often enough for them to be familiar. With new students, time should be spent explaining the rules, with appropriate demonstrations.
3. Lesson preparation should be adequate and include checking on risk assessments and, where necessary, the health & safety precautions required. Requisitions must not be handed in at the last minute; technicians must be given adequate time to prepare work safely. Time should be allowed for consulting more-senior colleagues where there is any doubt and to try out experiments, particularly those involving significant hazards. Teachers must only deviate from the scheme of work (for which the activities have been checked against model risk assessments), after making a further risk assessment, checked with a subject specialist, possibly obtaining a special risk assessment from CLEAPSS. Teachers should explain precautions to students as part of their health & safety education, using the CLEAPSS *Student Safety Sheets*, where appropriate.
4. Open-ended investigations must be organised to allow the teacher to assess any risks and identify precautions before any practical work begins.
5. If, because of large class size or indiscipline, health and safety cannot be maintained during certain practical work, the work should be modified or abandoned. This decision should be discussed with the appropriate subject specialist and reported to the Head of Science.
6. A teacher is responsible for the health and safety of any of his/her classes taken by a trainee teacher. If the normal class teacher is absent, another science teacher must be given this responsibility by the Head of Science.

7. Teachers in charge of courses are responsible for ensuring that technicians are familiar with the appropriate precautions needed to control any hazards which might be encountered in preparing equipment for their lessons and in clearing the equipment away. Class teachers may need to remind technicians of such warnings.