



**CHILDREN AND YOUNG
PEOPLE'S DEPARTMENT**

**HEALTH AND SAFETY POLICY &
GUIDANCE FOR SCIENCE IN
SECONDARY EDUCATION**

**HS/ECS/049
(PART A)
POLICY**

DATED: OCTOBER 2004

**THIS DOCUMENT REPLACES
H007/94**

**Children and Young
People's Department**



2002-2003
Community Legal Services
2003-2004
Transforming Secondary Education
Child and Adolescent Mental Health
Services
2006-2007
Positive Youth Engagement

WIRRAL LA**HS/ECS/049****HEALTH AND SAFETY POLICY & GUIDANCE FOR
SCIENCE IN SECONDARY EDUCATION****INDEX**

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Headteachers should ensure that all members of staff concerned with the delivery of science, whether teaching or non-teaching staff, have read and agree to observe these regulations.

1. Intended audience for this policy and guidance

This policy dated September 2004 replaces earlier guidance H007-94 “*Health and Safety Policy Guidance for Science Education*”.

The policy is concerned with health and safety in science departments in secondary schools (with or without sixth forms), and special schools with secondary age pupils unless the type of work is more comparable to that carried out in primary schools (in which case the policy and guidance for Primary Schools should be observed). A characteristic of the schools covered by this policy is that science is taught by specialist staff in specialist laboratory accommodation. However, the policy still applies even if, exceptionally, science is taught in ordinary classrooms and/or by non-specialist staff, including in Pupil Referral Units or Home and Hospital Teaching Schemes. The Policy applies not only to science teachers, but also to others who work within the science department, including technicians and other support staff.

2. Scope of this policy of practice

This Policy of Practice should be read in conjunction with H003/2000 **Wirral Education Authority** Health and Safety Policy (issued May 2000), the school’s own Health and Safety Policy and any other relevant policy that the Authority may issue from time to time. See Appendix A for policy and guidance documents.

This Policy is not concerned with the teaching of health and safety, although that is a requirement of the National Curriculum Programmes of Study.

3. Advice on health and safety matters

The Director of Children’s Services designated representatives for giving advice on health and safety in teaching science in secondary schools is the General Inspector Science, Secondary Science Advisor, Secondary Science Advisory Teacher and LA Health and Safety Officer.

In addition, the education authority maintains a subscription to the CLEAPSS School Science Service, Brunel University, Uxbridge UB8 3PH (tel: 01895 251496, fax: 01895 814372, e-mail: science@cleapss.org.uk for the purpose of obtaining model (general) and special risk assessments under the COSHH Regulations and the Management of Health and Safety at Work Regulations and general advice on health and safety matters in science. **In an emergency, advice can be obtained by contacting the Health & Safety Section on 0151 666 5602/3.**

Shortly after the start of each term the CLEAPSS *Bulletin* is despatched to secondary (and relevant special) schools from the Authority’s mail room. If you are not receiving the *Bulletin* regularly contact the General Inspector Science.

4. Suitable national health and safety publications

This Education Authority’s health and safety policy for teaching science in secondary schools is largely contained within several nationally published documents. These are:

Hazcards, CLEAPSS School Science Service, 1995 or later (+updates)

Laboratory Handbook, CLEAPSS School Science Service, 1988 with additions dated 1991, 1992, 1994, 1995, 1997 and any later ones. (An updated CD Rom version is produced and sent into all schools annually)

- Safety in Science Education, DfEE, 1996
- Safeguards in the School Laboratory, ASE, 10th ed., 1996
- Topics in Safety, ASE, 3rd ed., 2001 ISBN 0863573169
- Safety Reprints, ASE, 1998 edition + later updates
- Hazardous Chemicals Manual, SSERC, 1997

We have previously also used the following publication and much of the guidance is still sound but, as it is no longer in print, schools are no longer required to have copies:

- Microbiology: an HMI Guide for Schools and Further Education, HMSO, 1990

All schools should have at least one copy of each of the above publications (split site schools, or those with several preparation rooms will need several copies of some of them) and all teachers and technicians must be made aware of their existence and reminded of them from time to time. They should be kept in a readily accessible place so that teachers may easily use them in planning their science activities.

5. Science department health and safety policy

The Authority regards a Head of Science (or equivalent) as the local manager for health and safety within the science department and hereby delegates a range of health and safety functions to that person.

The Authority requires that every science department should have its own Science Department Health and Safety Policy. This should clearly describe the organisation of, and arrangements for, health and safety within the department (including emergencies) and define the roles of various post-holders. It should state where health and safety documents are located and how the department deals with risk assessment (see below).

There should be laboratory rules for pupils and guidance for staff. The policy should outline procedures for the induction of new staff (teaching and technical). Certain regular health and safety checks are required (see below) and the timetable and procedures for these should be stated. This **Education Authority** is issuing alongside this policy and guidance, a Model Science Department Health and Safety Policy.

Science departments should consider this model policy and further adapt it to the details of their particular situation. To assist in this, a copy on floppy disc of the **Education Authority** Model Policy can be obtained from the Health & Safety Section, tel: 0151 666 5602/3. It is also available on the Wirral Learning Grid.

6. Risk assessment

Under the COSHH Regulations (Control of Substances Hazardous to Health Regulations) the employer must carry out a risk assessment before harmful micro-organisms are used or hazardous chemicals are used or made.

Under the Management of Health and Safety at Work Regulations the employer must carry out a risk assessment before any hazardous activities are undertaken. Following guidance in the Management Regulations Approved Code of Practice, this **Education Authority** has adopted the publications listed in Section 4 as containing model risk assessments for the activities normally undertaken in teaching science in secondary schools.

If the proposed activities, chemicals, living organisms, equipment, etc are NOT covered by any of these publications, then a Special Risk Assessment must be obtained by contacting the Secondary Science Advisor, Secondary Science Advisory Teacher or the LA Health & Safety Office.

When reviewing or drawing up schemes of work and/or planning lessons, science departments should review the advice given in the above model risk assessments and consider whether it needs to be modified to meet the needs of their situation, either for the department as a whole or for a particular class.

Warnings about any hazards and guidance on control measures to reduce the risks from them, together with any other relevant health and safety information, should then be included in the scheme of work and/or written in to teachers'/technicians' guides, lesson plans, pupil worksheets. Guidance can be found in the CLEAPSS guide *L196 Managing Risk Assessment in Science* (July 1997), which has been issued to all secondary schools.

There are no specifically banned chemicals or procedures in this Authority, other than the very few which it would be illegal to use (e.g. benzene). However, schools must follow the guidance in the publications listed in Section 4, including the use of any control measures.

Risk assessment must also cover the activities carried out, for example, by technicians, such as lifting and carrying, handling chemicals and living organisms, clearing up, etc. Departments could base such risk assessments on guidance in the CLEAPSS leaflet, *PS25 Model Risk Assessments for Laboratory Technician Activities*.

Further LA guidance can be found in policy and guidance document H008/98 "Risk Assessment".

7. Emergency procedures

If an accident happens in a laboratory, particularly if chemicals are involved, it may be necessary to take immediate Remedial Measures to prevent injury while waiting for the arrival of a qualified first aider. Guidance on suitable measures is given in the CLEAPSS *Laboratory Handbook* and other publications listed above. This should be copied to individual teachers and technicians and/or posted in prominent places in laboratories and preparation rooms.

In-house training in these measures should be considered through discussion at departmental meetings. Similarly, procedures should be in place for dealing with fires and chemical spills, including the provision of chemical spill kits (see the *CLEAPSS Laboratory Handbook*). Procedures should be outlined in the Science Department Health and Safety Policy.

8. Security of and access to laboratories, preparation rooms, etc

This **Education Authority** considers that, under the Management of Health and Safety at Work Regulations, science laboratories, preparation rooms, etc must be regarded as danger areas to which access must be restricted to those with appropriate training. **This means that pupils should not be permitted in a laboratory without proper supervision (see Section 10) and that laboratories and preparation rooms should be kept locked when not occupied.**

If circumstances in a particular school do not permit this (e.g. because a fire exit route is through a laboratory) then the Science Department Health and Safety Policy should state what steps are taken to reduce the risk arising from this situation (e.g. by giving priority to technicians to clear away chemicals from this laboratory first).

Pupils, however senior, should not be allowed to work unsupervised in laboratories, although in the case of students carrying out project work as part of A-level GCE or equivalent courses, it may be sufficient to have a teacher, or, if appropriate, a technician within earshot in an adjoining room. Before permitting this, a risk assessment should be carried out.

9. Supervision of pupils/students in laboratories

Normally, only qualified science teachers should teach (practical) science and only qualified science teachers and technicians should work in science laboratories. For the purpose of the Policy of Practice, a qualified science teacher is a person with Qualified Teacher Status and a teacher's certificate, degree or equivalent qualification in which a science or sciences formed an appreciable part of the course, normally as a main subject.

If a non-science subject has to be taught or a form has to be based in a laboratory, or if a non-specialist has to cover a science class in a laboratory, then:

- the staff concerned must be given brief in-house training about laboratory rules;
- the head of department must be aware of what is going on and accept a general supervisory role;
- a qualified science teacher must be within earshot, e.g. in an adjacent laboratory
- standards of behaviour must be no less than those expected in a science lesson and science laboratory rules must apply;
- no practical work should be allowed to take place; and
- where possible, hazardous chemicals/equipment should be inaccessible and mains services switched off.

In the case of licensed teachers, articulated teachers or students on initial teacher training or on the Graduate Teacher programme, health and safety must form an integral part of the training provided and they must work under the direct supervision

of a qualified science teacher. In the case of students on teaching practice, if the teacher judges that s/he need not be in the laboratory at the same time as the student, taking into account the nature of the class, the activity to be undertaken and the skills of the student, then the student may work on his/her own but the teacher must still be nearby, available to take over the class at any time, should the need arise.

In the case of instructors, or non-science staff who may be teaching some science, then the school must arrange adequate safety training. This can be provided in-house but will usually require regularly timetabled time for discussion of potential problems, trying out practical activities, etc. The details should be recorded and made available on request, e.g. to the officers of the **Education Authority** and the Health and Safety Executive etc.

10. Training for staff

The Management of Health and Safety at Work Regulations require that adequate health and safety training must be given to staff when first taken on by an employer and when their jobs change (e.g. when new work practices or new equipment are introduced). Such training must be repeated periodically.

From time to time this **Education Authority** will organise training courses for heads of science and for technicians including CLEAPSS courses. Heads of science (or their representatives) are expected to attend such courses or similar ones and to pass on relevant parts of their training to colleagues through departmental

Science Department Health and Safety Policies should outline what procedures are in place for the induction of new staff (teachers and technicians) and any particularly hazardous procedures for which school-based training is given before a member of staff can carry them out. Brief training or a set of rules should be given to non-science staff and/or supply teachers who have to teach or supervise in laboratories. Technicians should be fully involved in training. Suitable training should be provided for any other ancillary staff who work in the science department, e.g. welfare assistants, bilingual support staff, cleaners etc.

11. Purchasing, storing and disposing of resources

When purchasing equipment or materials, and especially mains-powered electrical equipment, schools must ensure that it is safe and appropriate for use by children of the relevant age. Equipment purchased from recognised educational suppliers should be safe for school use, but that from other sources might not be. The CLEAPSS School Science Service (see Section 3) produces a number of guides to particular types of equipment. The guides in print change frequently, but a list of those currently available appears on the back page of the termly *Bulletin*. CLEAPSS staff members are very willing to discuss other equipment, not at present covered by guides. Copies of relevant guides can be obtained, free of charge, by contacting CLEAPSS. A complete reference set of guides is also kept in the Authority by the Health & Safety Section. Schools should always consult the relevant guide if they are considering purchasing hazardous equipment and especially mains-operated electrical equipment from suppliers not normally dealing with the educational market.

Similar considerations apply when equipment is given to schools, e.g. by parents, local companies, etc or brought in from home. It may well not be sufficiently safe for school use. Schools must check before accepting such donations and are generally

advised to refuse them. Any mains-powered electrical equipment donated or borrowed from home must undergo a portable appliance test by Technical Support Section before being used.

Equipment and materials must be stored safely. Hazardous chemicals and any other hazardous items must be locked away from children. Toxic, corrosive and other chemicals liable to pilfering should not be stored on open shelves in the preparation room, in fume cupboards, etc. Schools should follow guidance in the *CLEAPSS Laboratory Handbook*.

Disposal of chemicals, other materials and equipment may not only raise health and safety issues but also those of environmental protection. Science departments should follow the guidance given in the publications listed in Section 4.

12. Living organisms

Schools will often need to keep animals, plants and micro-organisms in the department. All uses of living organisms in classrooms raise issues about the health and safety of pupils and teachers (which are dealt with in the model risk assessments listed above) and, in the case of animals, about their welfare. Schools should seek advice from *CLEAPSS* publications, including relevant guides. The science department should have a policy on its use of living organisms.

13. Safety checks

All equipment, including personal protective equipment must be properly maintained. Regular checks are required in a number of situations (see below), some of which may be carried out by school staff, others by outside contractors. The outcomes of such checks should always be recorded and the records kept in a departmental Safety Check File or equivalent, which should be kept available for inspection by officers of the Education Authority and inspectors from the Health and Safety Executive.

14. Radioactive materials

The advice and guidance provided in the *CLEAPSS* publication *L93 Managing Ionising Radiations and Radioactive Substances* (August 2001) together with Section 12.10 of the *CLEAPSS Laboratory Handbook*, form the basis of the LA advice and guidance for practical work involving radioactive substances in Wirral schools and colleges. *CLEAPSS* guide *R92 The Measurement of Radioactivity*, explains the detection and measurement of ionisation radiations using a range of equipment suitable for a science laboratory. Copies are available by contacting the *CLEAPSS Helpline*.

Schools wishing to use radioactive materials must comply with *AM1/92 The Use of Ionising Radiations in Educational Establishments in England and Wales*. The school must have a copy of its letter of approval from the DfES (predecessors, DES or DfEE). A copy of this letter should be sent to the LA Radiation Protection Officer (RPO). The RPO for the **Education Authority** is the General Inspector Science. From January 2005, *CLEAPSS* will provide support and advice to Wirral schools through the RPA Service. Wirral LA will appoint a Radiation Protection Adviser (RPA) from the *CLEAPSS* RPA team. The RPO will be responsible for on-going monitoring.

Generally, schools should contact the LA RPO or the CLEAPSS **Helpline** for support and advice initially.

Each school using radioactive materials must appoint a Radiation Protection Supervisor (RPS), usually the most senior physicist. The RPO must be kept informed of the name of the current RPS. The RPS must check that:

- one copy of the record of radioactive sources is held in the school office or with the school safety officer, another copy is held in the science department and the LA RPO is sent a copy;
- there is a set of Local Rules for the use of radioactive materials, a copy of which has been lodged with the RPA (these may be based on the model rules in CLEAPSS guide *L93 Ionising Radiations and Radioactive Substances*, and must be modified to meet local circumstances in the school);
- the Local Rules are observed by all users;
- a record is kept every time a source is removed from and returned to the store;
- all sources are inspected after use;
- Radium sources are tested for leakage at approximately annual intervals in accordance with the procedures given in CLEAPSS guide L93 and out outcomes are recorded in the Safety Check File (see Section 14, above).

This **Education Authority** will provide training through CLEAPSS courses for those acting as Radiation Protection Supervisors. The RPS should provide appropriate in-school training for those handling sources.

15. Pressure vessels

Under the Pressure Systems and Transportable Gas Cylinders Regulations regular checks must be made on all pressure vessels, including autoclaves, pressure cookers and model steam engines, using a written scheme of examination (WSE). It is the policy of the Education Authority to have the examination carried out by inspectors from our insurance company, using WSEs provided by the Zurich insurance company. A record of the examinations must be kept in the Safety Check File (see Section 14, above).

16. Fume cupboards

Under the COSHH Regulations, there must be a check on the efficiency of every fume cupboard at least every 14 months. It is the policy of this **Education Authority** that these checks are carried out by insurance inspectors. Any failure of a fume cupboard to meet the requirements of the test is to be reported to the school for rectification, the current contract being with Zurich Insurance. The record of the check on each fume cupboard should be kept in the departmental Safety Check File.

17. Portable electrical appliances

Under the Electricity at Work Regulations the employer is responsible for the safety of all electrical appliances. It is the policy of the **Education Authority** that appliances powered by the mains are checked regularly and that these checks are carried out by technicians from Technical Support Section, using the portable appliance test set. If any appliance fails to meet the requirements of the test, it should be taken out of service immediately and reported to the Headteacher and the LA Health and Safety Officer.

The record of the check on each appliance should be kept in the departmental Safety Check File.

18. Monitoring implementation

Heads of departments are expected to monitor that this Policy of Practice is being implemented in their departments. For an example, see the CLEAPSS leaflet *PS30 Monitoring the Implementation of Science Safety Policies*. Suitable records of any monitoring should be kept (e.g. in the minutes of departmental meetings or in the records of any lesson observations or the use of checklists). In the event of any problems, heads of departments should discuss them with their line managers, the General Inspector Science, Secondary Science Adviser or Secondary Science Advisory Teacher.

The **Education Authority**, as the employer, has a responsibility to monitor that its Health and Safety Policies are being implemented. In this Authority, monitoring will be carried out by the General Inspector Science and the Health and Safety Officer, during routine visits to schools. Every 2 years there is a more formal safety audit carried out by the LA Health & Safety Section.

**HS/ECS/049
MODEL SCIENCE HEALTH & SAFETY POLICY
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