



Health and Safety Training for Teaching Assistants Working in Science in Secondary Schools

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Increasingly, various types of teaching assistant (TA) may be found working alongside teachers in schools. The Management of Health and Safety at Work Regulations require that employers provide 'adequate' training for employees, including, of course, teaching assistants. Whilst much of the training will be generic, independent of the subject being taught, work in science laboratories does present specific issues, not least as far as health and safety is concerned. Thus some science-specific training will be necessary. Employers will need to be satisfied that a teaching assistant is competent to supervise various types of practical work. This article has been produced by the Safeguards in Science Committee of the ASE. It is intended as a checklist for:

SAFETY

- Those organising training for teaching assistants within schools;
- Agencies which may be contracted to provide training or training materials (e.g. the national network of Science Learning Centres);
- Heads of science (and senior management) who have a responsibility, as managers, for ensuring their staff are adequately trained; and
- Science teachers who may have a teaching assistant working with them.

Heads of science, Local Education Authorities and other training providers may freely copy this document for use within their own establishments, or those in which they are contracted to work. The source should be acknowledged. The document is intended to give reminders for experienced science teachers planning work with teaching assistants. Teaching assistants themselves will need much more detail than the brief prompts given here, and the document is not intended to be copied and given to them.

Target groups

Teaching (classroom) assistants working in science laboratories in secondary (and special) schools, including the following:

- Those giving special needs support for statemented pupils;
- Those giving language support;
- Those giving general support; and
- Laboratory technicians supporting science lessons.

Some of the target groups may well not need all of the training suggested below. On the other hand, additional training may be necessary to deal with issues in science not related to practical work/health and safety.

Outline of proposed training

General health and safety in science

- Health and safety responsibilities and duties;
- Departmental health and safety policy;
- Departmental training;

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- Hazard, risk, risk assessment, control measures;
- Safety symbols and hazard warning signs; and
- Awareness of ASE/CLEAPSS/ SSERC/DfES publications, especially Safeguards in the School Laboratory (ASE), Hazcards®, Laboratory Handbook, Student Safety Sheets (CLEAPSS), Safety in Science Education (DfEE), HazChem Manual (CD2) (SSERC).

How teaching assistants operate in science

- Under the direction of the teacher, shared planning;
- No practical work unless the teacher is present;
- Not doing experiments for the pupils, helping pupils to do them;
- What the objectives of Sc1 investigations are;
- Role during assessment activities;
- When to inform the teacher or take action themselves;
- Action to take when the teacher is dealing with an incident;
- Unique behavioural problems arising in science;
- Risk assessment by the teacher/school/employer;
- Understanding reasons for rules for pupils/staff;
- Enforcing good health and safety practice and setting a good example
- What questions to ask and when; and
- Involvement in emergency procedures, e.g. immediate remedial measures, spills, etc.

Specific features of this lesson, this class, this room

- Lesson plan, learning objectives;
- Hazardous activities, chemicals;
- Identification of particular pupils;
- Lab rules that operate in this class;
- Location of gas, electricity and water cut-offs;
- Location and types of fire extinguishers, blankets, etc.;
- Location of eye wash facilities; and
- Evacuation procedures/route.

In the laboratory

- Layout of laboratory, location of equipment;
- Avoiding floors becoming cluttered, e.g. with bags and coats;
- General organisation when collecting/returning apparatus;
- Locking the door when the room is unoccupied;
- Pupils with special needs;
- General hygiene;
- Need for some types of practical work to be carried out standing up;
- Misuse of sinks;
- Eye protection - types, when to wear; and
- Special situation of fieldwork.

General equipment and procedures

- How to use a thermometer for laboratory work;
- How children misuse thermometers;

- How to set up and focus a micro- scope;
- How to use a top pan balance; and
- How to set up a clamp, stand and boss.

Bunsen burners and other heat sources

- Hazards posed by long hair, ties and scarves;
- Checking for perished tubing, tubing that does not fit;
- How to light a Bunsen burner and use it safely;
- Problems, e.g. check blocked jet, stiff collar, blocked gas tap;
- Leaving the flame on yellow, invisibility of flames in direct sunlight;
- Flames under cupboards, near curtains and posters;
- How to heat a test tube of solid;
- How to heat a test tube of liquid;
- Avoiding Bunsen burners, especially for flammable liquids;
- Evaporating, e.g. risks of spitting and boiling dry;
- Test tube holders and tongs.

Chemicals

- Safe handling with appropriate apparatus;
- More dilute is safer, simple guide to molarity;
- Eye protection for all pupils (and the teaching assistant!);
- Unsatisfactory eye protection e.g. missing vent, long strap, etc.;
- How to pour liquids;
- How to wash teat pipettes;
- Misuse of teat pipettes;
- Sniffing gases safely;
- Use of pH paper/universal indicator;
- Dealing with spills/breakages;
- Disposal of waste, i.e. what can be washed away, put in the bin or collected for separate, safe disposal; and
- Particularly hazardous chemicals/activities.
(This section may be omitted for some teaching assistants.)

Electricity

- Visual check on plugs, connecting wires;
- Batteries safer than mains; and
- Circuit work with bulbs, batteries, etc. and checking components.
(This section may be omitted for some teaching assistants.)

Biology

- Importance of sterile technique in microbiology;
- Fastening lid on agar plate but not sealing;
- Counting agar plates out/in after incubation and ensuring they remain taped closed;
- Human body fluids;
- Pupils as the subject of experiments; and
- Using plant/animal material.

(This section may be omitted for some teaching assistants.)

Emergencies

- Chemicals in the eye;
- Spills (chemical and microbiological) on the bench/floor;
- Broken thermometers;
- Chemicals in the mouth;
- Chemicals on skin;
- Heat burns;
- Dealing with small fires; and
- Allergic reactions/asthma attacks.

Nature of the training

- Hands-on in laboratory (partly);
- Open University-type distance learning courses (partly);
- May be partially drip-fed, as the need arises;
- Some activities in Safe and Exciting Science (ASE, 1999);
- Using CLEAPSS Hazcards®, Student Safety Sheets, etc. or equivalent SSERC publications;
- What's wrong (if anything) with this picture/artefact?
- Case studies of things that happen in lessons for discussion.

References

Safeguards in the School Laboratory (10th edition, ASE, 1996)
Safe and Exciting Science (ASE, 1999)
Hazcards® (CLEAPSS, 2004). Laboratory Handbook (CLEAPSS, 2004)
Student Safety Sheets (CLEAPSS, 2004)
Safety in Science Education (DfEE, 1996)
Hazchem Manual CD2 (SSERC, 2002).