

# Health and Safety At School

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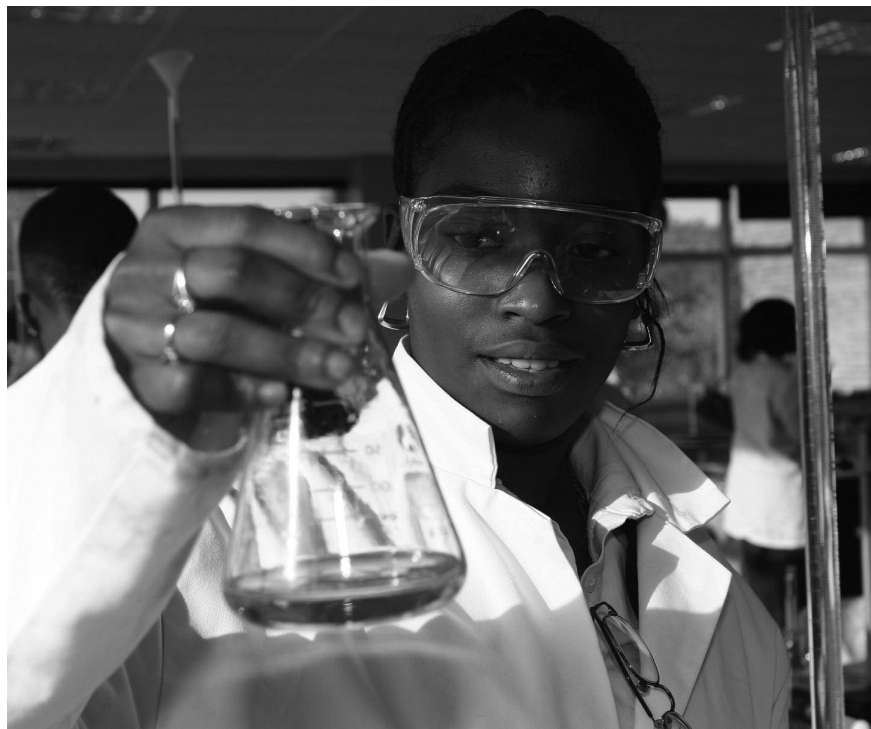
**The Health and Safety Act of 1974 made it law that all schools must have a health and safety policy and arrangements to put it into action. This is not surprising when you think that the numbers of adults and children in schools range from fewer than 50 to more than 1,000 – that’s a lot of people to look after!**

**It is not only the numbers that matter. Just think of the range of activities which go on in schools: PE, games, educational visits, access of vehicles in and out of school premises, science lessons in the laboratory... And there are many more – can you think of any other activities that go on in schools which could cause injuries or even death to pupils, teachers, parents or any other visitors to the school?**

## **AIM**

The aim of this report is to make you aware of the how seriously your school takes health and safety matters, and how important it is for you to know about some of the key issues of health and safety in and around your school. Recent statistics claim that there were 4 fatalities and 8,367 non-fatal injuries to school children during just 12 months!

Health and Safety policies in schools can only work effectively if people know what part they should play in them. And that includes you!



## LET'S LOOK AT SCIENCE LESSONS

Here is a list of some of the hazards that may be experienced in activities involving science experiments:

**spillage**  
**combustion**  
**toxicity**  
**absorption**  
**inhalation**  
**ingestion**  
**explosion**  
**corrosion**  
**sharp objects**  
**moving parts**  
**electrocution**  
**radiation**  
**heat and cold**  
**infection (biological)**



There are also risks arising from environmental contamination from:

**genetically modified organisms (GMO)**  
**chemicals**  
**micro-organisms**  
**experimental animals**  
**animal parasites**

Do you know what each of the above means? Have you experienced any of them?

## RISK MANAGEMENT

Each of the hazards above is given a risk assessment and the assessment is the starting point for your teacher to decide the level of risk certain experiments have in your school.

The risk levels detailed below apply to activities involving science experiments:

**Low risk (level 1):** Activities which do not involve heat, pressure or vacuums, acids or other corrosive materials, highly volatile and/or flammable chemicals, mains-voltage power sources, dangerous biological materials or animals.

**Medium risk (level 2):** Activities which involve heat, pressure or vacuums, fumes, acids or other corrosive materials, highly volatile and/or flammable chemicals, mains-voltage power sources, biological materials, and low-speed mechanical and/or moving devices or objects.

**High risk (level 3):** Activities which involve high levels of heat or very low temperature materials (eg liquid oxygen or nitrogen), high pressure or low vacuums, toxic fumes, highly corrosive substances, highly volatile and/or flammable chemicals, high-voltage electricity (static and/or current), radiation emitters, dangerous biological materials and high-speed mechanical and/or moving devices and objects.

### Minimum supervision

If any adult other than a teacher is involved during an experiment, a teacher should always be present to take overall responsibility.

### Minimum equipment

Protective equipment appropriate for the particular activity, such as safety glasses and laboratory coats or aprons, should be worn by everyone involved in the activity.

## HAZARD REDUCTION

**Low risk (level 1)** activities may take place outside a laboratory.

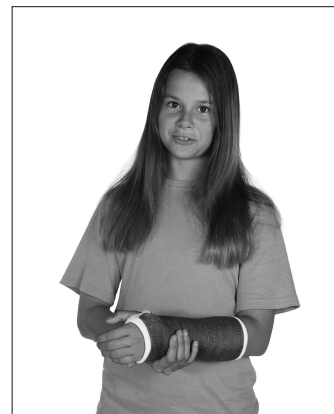
**Medium risk (level 2)** activities may only take place outside a laboratory after careful risk evaluation has been carried out.

**High risk (level 3)** activities should only take place in the laboratory where all safety features are functional and accessible. With **high risk (level 3)** equipment, the teacher may demonstrate how to use all the equipment to make sure that everyone involved knows how to use the equipment safely. The teacher will need to think carefully about what equipment and material is used during the experiment and where the experiment will take place.

## CLEAPSS

CLEAPSS stands for the **Consortium of Local Education Authorities for the Provision of Science Services**. Here is an extract from their website offering advice on health and safety to new teachers.

'...only about 2% of reported accidents to pupils happen in school science labs (most occur during PE and games; also in playgrounds and corridors). However, this good record is due to the vigilance of science teachers and technicians, a vigilance that must be maintained. Of the very small number that do occur, the most serious ones usually happen during teacher demonstrations. A surprisingly high proportion of these seem to involve teachers in their first few months in the job. Sometimes, inexperienced staff are just unaware just how dangerous some activities can be.'



## BANNED OR NOT?

Dr Colin Osborne, the Royal Society of Chemistry's schools and colleges education manager, claims that 'there are significant misunderstandings about the chemicals and scientific activities which are banned in secondary schools, and some teaching is inhibited by unjustified concerns about health and safety.'

Dr Osborne believes that 'schools need to ensure there is better understanding of what's banned and what is not to enable them to teach the exciting but safe science.' He said that the visually spectacular thermite reaction – which produces molten iron sparks and a plume of smoke – would be one which many adults remembered from their school days.' This is not a banned experiment, though many teachers believe that it is. But so long as pupils wear goggles and the experiment is carried out behind a safety screen and from a reasonable distance, it is perfectly safe, said Dr Osborne.



## MORE QUOTES TO GET YOU THINKING

**'A mother has said she will sue her son's school after he suffered a brain injury following a playground accident. Jack Cohen, five, hit his head in the playground at Broadfield Primary School in Edgeware.... With no visible injuries he was not sent home but collapsed hours later and required emergency surgery.'**

(BBC News)

**'Questionnaires were sent to more than 1,600 secondary schools and 634 education officers. Teachers, lab technicians and local authority officers were asked about a list of 40 school science experiments or materials. Two of the chemicals, benzene and crude oil, are banned because of their highly carcinogenic qualities. The rest are seen by the experts as safe, as long as suitable precautions are taken.'**

**The results confirmed the RSC view that a "highly desirable concern for safety in science laboratories, and the occasional journalistic misreporting, has led some teachers to become over-cautious. They have stopped doing some of the more exciting and entertaining science activities."**

**The results revealed a number of misconceptions about what is banned nationally. Some 70% of schools believed it was illegal for pupils to sample their own blood, and 32% thought that experiments based on pupils' own saliva samples were banned. At least 15 other chemicals or activities in the list were thought by many schools to be banned. These included keeping giant African land snails, a "volcano" experiment using ammonium dichromate and demonstrations using very small quantities of a radioactive substance. Nearly one quarter of schools believed there was a ban on the dissection of eyeballs, when in fact the only restrictions arise from measures to control BSE.'**

(The Guardian)

**'Typical sports injury claims (for compensation) would be: Injuries to children caused by poor supervision or tuition at school sports...'**

(www.claimssolicitors.co.uk)

**'A spokesman for the Campaign for Real Education said: 'Parents should not be encouraged to apply (for compensation) where it is an accident, but we suspect that a lot of local authorities just pay. It's easier and quicker.'**

(www.gazettelive.co.uk)

# Task One

## DEFINING HAZARDS

Choose three of the hazards in the list headed **Let's look at science lessons**, and write a definition for each. For example, explain what toxicity is.

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# Task Two

## NEW SCIENCE TEACHER ADVICE SHEET

Organise the class into groups of four or five and work with one of your science teachers to develop a new science teacher advice sheet. The sheet should explain how the new teacher can promote health and safety in the school labs. The advice sheet should be good enough and clear enough to give to all new science teachers when they first start work as a science teacher in school.

# Task Three

## NOT ONLY SCIENCE!

Work in small groups to create a poster showing the layout of your school and identifying the main health and safety flashpoints – points in the school where accidents and health hazards are most likely to occur, including the street outside the school.

You will need to see information on all the accidents that have occurred in the school over the past six months or more to help you in accurately identifying the type of incident and where and how it happened.