Hampshire County Council

Improvement and Advisory Service

SERVICES FOR SCHOOLS

Safety in science at Key Stages 1 and 2

Health and safety guide for schools

Fifth edition

June 2025

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Introduction

Health and safety in the curriculum forms part of our overall duty in safeguarding children and ourselves, for which our headteacher and governors have responsibility to oversee.

Teachers in Hampshire have a good record of safety through taking wise precautions when organising practical science. Schools submit a safety audit each year to the Local Authority which reviews health and safety in science and helps you, as a school, to formulate actions where needed to further develop and improve health and safety processes and practice.

These guidelines aim to help schools to maintain this position. This new document replaces the previous set of guidelines: *Safety in science at Key Stages 1 and 2* (December 2020, fourth edition).

In science, a key element of our work is safety. However, this does not mean creating a completely *risk free* environment for pupils. Our key principle should be to:

"Teach children how to be safe".

This key principle supports recognised good practice formally outlined in National Curriculum general teaching requirements:

"When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- *about hazards, risks and risk control*
- *to recognise hazards, assess consequent risks and take steps to control the risk to themselves and others*
- *to use available information to assess the immediate and cumulative risks*
- *to manage their environment to ensure the health and safety of themselves and others*
- *to explain the steps they take to control risks."*

CLEAPSS

Teachers in maintained schools in Hampshire can access a wide range of safety guidance through the local authority's CLEAPSS membership. For schools that do not have a membership with CLEAPSS, they should go to their Health and Safety provider for guidance and support.

The Health and Safety at Work Act and subsequent Regulations require employers to protect their employees by, for example, providing safe working conditions, undertaking risk assessments, removing or reducing risk, providing information, instruction training and supervisions for activities (required under a range of Regulations, including COSHH). Membership of CLEAPSS enables the local authority to discharge some of these responsibilities since member schools have access to high quality health and safety advice, with curriculum support and advice on using high quality practical work for science, design and technology and art.

CLEAPSS guidance and documentation is recognised by the Health and Safety Executive and the Department for Education (DfE) as providing current best practice advice, including model risk assessments to the school and college setting.

Membership provides local authority officers teachers, technicians, (and head teachers and governors) in member schools with access to the following CLEAPSS support:

- access throughout the year (not just term time) to the CLEAPSS telephone and email Helpline
- access to the CLEAPSS website which contains, among other things, Primary Resource, which contains CLEAPSS primary science and technology publications.

CLEAPSS is committed to regular review and updating of these resources so that they always offer members the most up to date and relevant advice. Primary termly Explore newsletters distributed free to all schools. These provide a range of information on practical work in science and technology and on current health and safety issues. Schools can access CLEAPSS *Explore* online via their website. Contact CLEAPSS on:

Website: http://primary.cleapss.org.uk

Helpline: https://primary.cleapss.org.uk/Helpline

Email: primary@cleapss.org.uk

Tel: 01895 251496 (Emergency)

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All staff will need to have set up an individual login to access CLEAPSS services.

This safety guidance should be used in conjunction with other appropriate local authority safety guidance, such as advice from Hampshire Outdoors, found on the EVOLVE website (access via: www.hampshireoutdoors.com). Please contact the Hampshire Outdoors Team if you have any questions or queries regarding outdoor/offsite activities: outdoor.education@hants.gov.uk.

Part 1: Responsibility for health and safety in science

The responsibility for ensuring the safe teaching of science is shared between the employer, governors, headteacher and staff. Key responsibilities can be summarised as follows:

The employer

- provide a safe and healthy working environment for staff, pupils and volunteers
- provide information, guidance and training opportunities
- develop and implement specific safety procedures based on the findings of reported shortcomings with a focus on managing real and significant risks
- monitor and review school annual safety audit submissions
- provide assurance of arrangements through audits and inspections as required.

The governing body

- ensure health and safety has a high profile
- ensure that adequate time and resources are available
- ensure staff have access to appropriate training and competent health and safety advice
- monitor and review arrangements through an annual report from the headteacher
- support and challenge the headteacher and senior leadership team to ensure effective health and safety management
- approve the school's safety policy.

The headteacher

- develop a safety culture that is in accordance with the school's health and safety policy and the local authority's policies/procedures (Hampshire county council's children's services health and safety team have produced a range of procedures, guidance, templates and checklists that schools can use to ensure you manage your schools safely*)
- consult staff and ensure that they are aware of their responsibilities
- ensure appropriate training is provided, including the provision of emergency training
- be aware of the limits of teachers' competencies
- ensure that teachers are aware of their responsibilities and understand them
- manage resources to enable the safety policy to be implemented, including the identification of training needs
- act on reported shortcomings

- monitor and review procedures to ensure that they are in accordance with the safety policy
- report to governors annually.

*Access to this is for all Hampshire County Council schools and those other schools who have a Service Level Agreement (SLA) with Hampshire's Corporate Health and Safety Team.

Science leader

- ensure that teachers understand the process of risk assessment in science, and are aware of their responsibilities
- ensure that the information needed for risk assessments is easily accessible by teachers
- ensure that when risks have been identified as significant, risk assessments are written down and reviewed
- regularly check the CLEAPSS website for up-to-date advice
- monitor and audit practice and resources – this is supported by the local authority's annual science safety audit form
- identify training needs
- ensure that the principles of safety in science are included in the school policy
- report any shortcomings in line with the school's procedures.

Teacher

- take reasonable care of themselves and others
- carry out the process of risk assessment as necessary, consulting the science leader if the risks are high
- if appropriate, try out practical activities themselves before using them with pupils
- support the implementation of all health and safety procedures and policies
- regularly check the CLEAPSS website for up-to-date advice
- follow the guidelines and advice on the CLEAPSS website to minimise/reduce risk
- ensure that other adults and pupils in the room are aware of the risk involved in the activity, and the actions that should be taken to minimise/reduce risk
- ensure that pupils have an opportunity to discuss any hazards, and what they should do to keep themselves safe
- report any shortcomings in line with the school's procedures.

Schools that subscribe to the Hampshire County Council Insurance Service Level Agreement (SLA) are indemnified by the Hampshire County Council Public and Employers Liability insurances. Hampshire County Council's holds £200million Public Liability and £125 million Employers Liability insurance**.

The County Council indemnifies the following in respect of civil claims for damages**:

- any employee involved in the usual activities of the school
- volunteers involved in the usual activities of the school who are under the control and supervision of the school
- student teachers and students on work experience who are under the control and supervision of the school
- governors.

Further details of Hampshire County Council's insurance can be found on the Hampshire Services for Schools (https://hampshireservicesforschools.hants.gov.uk) website, please visit the Hampshire Insurance Services area (https://hampshireservicesforschools.hants.gov.uk/Services/6836).

**Schools who have not taken up the Hampshire County Council insurance service level agreement (SLA) should check with their own insurers as to the indemnity provided.

Part 2: Risk assessment

Schools and teaching staff have a legal duty to, so far as reasonably practicable, take every reasonable precaution to ensure the safety of themselves, pupils and colleagues. This involves identifying hazards and the risks they may present. The precise definitions of hazard and risk, as used throughout this publication, are as follows:

- a ***hazard*** is something with the potential to cause harm
- a ***risk*** is the likelihood of a hazard causing harm in practice.

There are two broad stages to carrying out a risk assessment. The first stage involves the identification of the hazards and the second involves working out how the activity can be carried out so that the risks presented by these hazards can be removed or reduced to an acceptable level through the use of suitable controls.

Teachers should carry out this process in science whenever they are carrying out an activity that presents hazards.

Risk assessment is often a matter of professional judgment informed by any regulations or advice offered by the local authority, or any regulations or advice offered by the scheme of work from which the teacher is working.

Hampshire Local Authority has provided schools with membership to CLEAPSS to ensure employees have an effective way of accessing risk assessments and safety advice in science, design and technology (D&T), and art. Consequently, teachers are required to consult the model risk assessments and guidance available on CLEAPSS Primary when conducting their own risk assessments.

Risk assessment – exposing pupils to hazards

The following statements set out the considerations that teachers must legally make in carrying out a risk assessment.

Before exposing pupils to hazards, teachers must use their professional judgment to ensure that:

- the work involving hazards is sufficiently necessary to justify the risks involved
- potential risks have been identified, risk assessed and control measures put in place
- pupils understand the risks and have been given clear instructions about proper procedures for dealing with hazards
- pupils are aware of the appropriate action to take in the event of an emergency

Where risks are significant, the necessary actions must be recorded. Schools will need to decide whether this is best done within the medium-term planning or incorporated into lesson plans.

Activities which have a significant risk associated with them include things such as heating, burning, fieldwork, pond work, tasting, using hot water and using weights to stretch elastic bands.

Safety measures for making a risk assessment in these situations can be found in CLEAPSS guidance.

Risk assessment – step-by-step guide

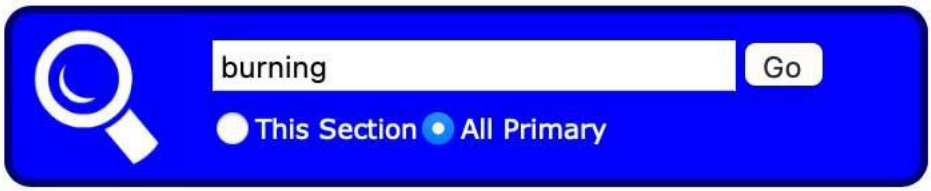
The above considerations should be taken into account when teachers use the following step-by-step guide to plan and prepare for an activity in science.

Step 1: Read relevant safety measures

When planning science units of work, teachers will need to ask themselves:

"I need to teach my children 'X', using 'Y' activity. What is the safest way to do this? What do I need to do for this to happen?"

The ***Doing things safely*** area of CLEAPSS website contains resources that provide the safety measures you might implement when using a variety of different equipment, materials and learning spaces Use this to find out the safety measures that will minimise the chances of the hazard(s) causing harm.



Additional information might also be contained in some published medium-term planning. If there is a conflict of advice, then it will be necessary to use the information provided by the local authority via CLEAPSS.

Step 2: Think about how the activity can be carried out so that risks are reduced

Teachers will need to think about their own class and decide on the safety measure(s) they will use to keep children and themselves safe. They will need to consider a range of different factors to do this.

In working out the safest way to carry out an activity, they will need to consider:

- the number of pupils involved
- the number of pupils that can safely work in the space available for the activity
- the age, knowledge and maturity of the pupils
- the specific physical, emotional and behavioural needs of the pupils
- the level of supervision available
- the provision of suitable (sufficient in number and in good condition) resources, facilities and protective measures given the nature of the activity, e.g. sinks, sand trays, gloves, goggles
- the quantities and particular materials that will be used
- the voltage used in electrical work.

If teachers do not have the necessary expertise to carry out the risk assessment, or to carry out the activity with their class, they should seek appropriate help.

As a result of considering all these issues, and in light of the information collected in step 1, teachers should be able to identify the safest way in which to carry out the activity.

Step 3: Record the control measures

This will be done before the lesson starts. The purpose of recording these measures is so that teachers remember to carry them out. This could be in the form of notes on planning; annotations of the CLEAPSS resource; or a list of actions that need to be undertaken/ remembered, and signs next to equipment. The recording of control measures should be decided upon as a school. It is the headteacher's responsibility to monitor and review that there are suitable and sufficient arrangements in place and that they are being followed.

In some circumstances, however, it will be necessary to alter this assessment when particular judgements have been made in advance that are now no longer valid. For example, the fact that pupils have returned from lunchtime in an unusual, unsettled or over-excited state might result in a change to the way in which pupils carry out a particular activity in science. An activity which is perfectly safe on a Monday morning may be less so on a Friday afternoon or following a wet playtime! If the teacher felt that this behaviour now presented a significant risk given the nature of the activity, then the activity would need to be amended; the teacher could for instance decide to demonstrate it rather than letting pupils carry out the work themselves.

Step 4: Follow the control measures and actively involve children

Teachers need to model this process for children and increasingly involve them in the process. When presenting children with a new context, teachers will need to inform them of the specific hazards associated with that context. In familiar contexts, however, teachers should ask children to identify the hazards. Useful questions include:

- what can we do to avoid any problems?
- what rules shall we all work to?
- what equipment might we need to use? (eg goggles, gloves)
- what shall we do if something does go wrong?
- (and after the activity): how useful were our rules in reducing risk?

These guidelines are written in conjunction with the risk assessment process outlined in CLEAPSS P137 How to do a risk assessment: https://primary.cleapss.org.uk/Resource-File/P137-How-to-do-a-risk-assessment.pdf.

Additional guidance for science leaders can be found in the following documents via CLEAPSS:

- P048 – Model health and safety policy for science: https://primary.cleapss.org.uk/Resource-File/P048-Model-health-and-safety-policy-for-science.docx
- P011 – Leading primary science in your school: https://primary.cleapss.org.uk/Resource-File/P011-Leading-primary-science-in-your-school.pdf
- P020 – Risk assessment concept cartoons: https://primary.cleapss.org.uk/Resource-File/P020-Risk-assessment-concept-cartoons.pptx

Contact CLEAPSS on:

Website: http://primary.cleapss.org.uk

Helpline: https://primary.cleapss.org.uk/Helpline

Tel: 01895 251496 (Emergency).