



Health and Safety Teaching Ideas

Learning Objective:

To understand the importance of working safely in a laboratory.

Success Criteria:

- To identify some important safety rules in a laboratory.
- To recall and identify hazard symbols.
- To explain how to keep yourself and others safe in a laboratory, especially during practical investigations.

Context

This lesson is part of the Introduction to Science unit of work, focusing on health and safety in a science classroom.

Resources

containers of chemicals with hazard symbols, e.g. hydrochloric acid 0.5M, sodium hydroxide 0.5M, nitric acid 0.5M, calcium carbonate, magnesium ribbon
mini whiteboards and pens (optional)

Starter

Laboratory Hazards

From the picture on the PowerPoint, students identify hazards in the lab during a practical. Tell the students they can work as a table or in pairs to come up with as many as they can. They then share their ideas with the class. Encourage students to challenge themselves by completing the extension activity and come up with suggestions to prevent these hazards. A quick class discussion around why health and safety are so important will link the next part of the lesson.

Main Activities

Hazard Symbols

What do the following hazard symbols show? This can be done by going through each one on the PowerPoint and students writing their answers on mini whiteboards or using the **Hazard Symbols Match and Draw** worksheet. The answers appear one by one on the following slides or the **Hazard Symbols Match and Draw Answers** can be used for peer- or self-assessment.

Following naming the hazard symbols, students have a go at describing the meaning of each of the hazard symbols. This can be completed on the same **Hazard Symbols Match and Draw** or using mini whiteboards. The answers appear one by one on the following slides or the **Hazard Symbols Match and Draw Answers** can be used for peer- or self-assessment. The match and draw does not include the acute toxicity hazard symbol or the explosive hazard symbol. Discuss with the class why hazard symbols are so important.

Hazard Symbols in the Lab

Students go around the room and fill in the **Chemicals and Hazards Table**. Bring the class together to discuss their findings. Some may have found more than one hazard symbol on each chemical.

Safety Rules in the Lab

Discuss lab safety rules with the class. Ask the students to look at the pictures and describe the rules. Then ask students to place the rules in order of most important to least. Some students may be able to think of some rules of their own. Ask students to list six of the most important safety rules. To support lower ability students, use the **Safety Rules Worksheet**. The **Safety Rules Answers** can be used to self- or peer-assess.

Problem-Solving

Students read the scenarios and explain, in their own words, what the teacher/student should do. This could be a discussion activity in groups or an independent activity using the **Problem-Solving Worksheet**. Using the answers on the next slide or on the **Problem-Solving Worksheet Answers** students could peer- or self-assess.

Plenary

Hazard Symbols Quiz

Students hold up answers on their mini whiteboards.

Hazards in the Home

Learning can be extended at home with the Hazards in the Home worksheet. Students must ask a responsible adult to help them find products in the home with hazard symbols on.

Disclaimer

We hope you find the information on our website and resources useful. This resource refers to the use of chemicals. The use of chemicals is potentially hazardous. It is your responsibility to assess whether it is safe to use chemicals in your classroom. You are responsible for ensuring the safe storage, usage, labelling and disposal of chemicals in accordance with COSHH regulations (or equivalent in the country in which you are teaching). We are not responsible for the health and safety of your group or environment and so, insofar as it is possible under the law, we cannot accept liability for any loss suffered by anyone due to the use, storage or disposal of chemicals or any other activity carried out as a result, whether directly or indirectly, of this resource. If you are unsure in any way, we recommend that you take guidance from a suitably qualified professional.