FLINN SCIENTIFIC, INC

Science Department Safety Training Notes

Discussion and Notes

Keep a copy of these safety training notes and a signed attendance sheet to verify regular safety training. Regulatory inspectors will usually request proof of safety training. A copy of the sign-up sheet that we suggest using may be found at www.flinnsci.com/media/412875/signup.pdf.

Please call Flinn Scientific if you have any questions about the demonstrations you typically perform. Ask to speak to one of our experienced staff scientists to review inherent risks and discuss appropriate precautions. We want to hear from you!

Safety Guidelines for Science Demonstrations

Demonstrations are an effective teaching tool. Even though students may not be handling chemicals or using equipment during a demonstration, it is vitally important that teachers follow rigorous safety rules. Flinn Scientific has developed a list of 20 safety guidelines for science demonstrations. We recommend that all teachers who perform demonstrations review these guidelines and follow them to improve safety and prevent accidents.

1. Always practice all demonstrations before performing them in front of students. A demonstration should only be attempted after all potential physical and chemical hazards have been identified and their risks assessed.
2. Always follow a written procedure that includes safety precautions to mitigate risk.
3. Never attempt a demonstration that will place you or your students at risk.
4. Wear appropriate eye protection for all chemical and physical science demonstrations.
5. Require students to wear goggles if chemicals, heat or glassware will be used. Students must also wear safety glasses for any demonstration in which gases or pressure will be generated.
6. Use a safety shield if there is the slightest possibility that a container, its fragments or its contents could be propelled with sufficient force to cause personal injury. If heat or pressure is involved, audience protection is required.
7. Cap all reagent bottles containing flammable liquids after dispensing appropriate small quantities and remove the bottles from the demonstration area **before** using a heat source. Do **not** add more liquid to a demonstration in progress and **do not** repeat a demonstration using flammable liquids.
8. Ensure that all demonstrations have an educational objective. If the demonstration uses toxic chemicals or a potentially hazardous procedure, review the demonstration against the learning objectives and consider alternatives.
9. Know and understand the properties of the chemicals and chemical reactions involved in all demonstrations.
10. Comply with all local rules and regulations.
11. Use fresh chemicals and clean glassware to prevent possible contamination.
12. Do not allow harmful quantities of noxious gases to enter the local air supply.
13. Do not use open containers of volatile, hazardous substances without adequate ventilation as provided by fume hoods.
14. Use borosilicate glassware (e.g., Pyrex®) and check for chips and cracks before use.
15. If a loud noise is anticipated, wear hearing protection and warn members of the audience to cover their ears.
16. Have a fire extinguisher on hand whenever using flammable substances.
17. While in the laboratory, no one should eat, drink, or taste any food grade items or non-food substances.
18. Do not use demonstrations in which parts of the human body are placed in danger (such as dipping hands into liquid nitrogen).

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19. Provide a written procedure, as well as hazard and disposal information, for each demonstration if audience members (colleagues or fellow teachers) will be encouraged to repeat the demonstration.
20. Arrange for appropriate waste containers and subsequent disposal of all hazardous waste materials.

Free Online Safety Training

Every science teacher in your school should be "Flinn Safety Certified!" A comprehensive, motivational safety training program is available online to all teachers, absolutely free, anywhere and anytime! To view the free video chapter entitled "How to Conduct a Safe Lab Activity," visit the Flinn Web site at http://labsafety.flinnsci.com/Chapter.aspx?ChapterId=116&UnitId=8. In the video, Irene Cesa discusses practical tips to teach students about safety.

Flinn Scientific Values Your Support

Please continue to support our efforts to improve safety in school science labs by ordering your science supplies and laboratory chemicals from Flinn Scientific.

Next Month's Topic

Chemical Spill Control

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