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Pie in the Face Safety Demonstration

Introduction

This simple demonstration will teach your students the importance of wearing safety goggles any time heat, glassware or chemicals are used in a science laboratory.

Concepts

- Goggle safety

Materials

Chemical splash goggles	Towel (for cleanup)
Pie tin, aluminum (a paper plate will also work)	Willing participant
Shaving cream	

Safety Precautions

Wear chemical splash goggles and be certain the goggles fit the volunteer properly. Wear an apron or old clothes. Have the volunteer keep his mouth closed during the demonstration.

Preparation

Prepare a shaving cream pie using a pie tin and shaving cream. A metal pie tin, disposable aluminum pie tin, or paper plate all work well. Fill the pie tin with shaving cream until it is about 2 inches thick.

Find a willing "victim." Some teachers have used other science teachers, the department chair, the assistant principal or the principal. Having an administrator participate in the demonstration shows their interest in science and their commitment to laboratory safety. Other teachers have a colleague perform the demonstration on themselves. Always ask for permission; never let this demonstration be a surprise to the participant. Our recommendation is not to involve students in the demonstration.

Procedure

1. Explain the importance of wearing safety goggles in the laboratory any time heat, glassware or chemicals are used.
2. Place a towel around the shoulder of the volunteer or have them wear a lab coat to protect against falling shaving cream.
3. Have the volunteer put safety goggles on. Check to make sure they fit securely.
4. Gently smash the shaving cream pie in the face of the volunteer. Try to hit the volunteer squarely in the face so the eyes (goggles) are fully covered.
5. Remove the pie tin from the face leaving a thick layer of shaving cream on the face of the volunteer.
6. The volunteer should now remove the shaving cream from around his mouth in order to breathe.
7. The volunteer should now remove his safety goggles straight out from his face, demonstrating that his eyes are completely protected from the shaving cream accident.
8. The volunteer should clean off his or her face at the end of the demonstration.

Disposal

Please consult your current *Flinn Scientific Catalog/Reference Manual* for general guidelines and specific procedures, and review all federal, state and local regulations that may apply, before proceeding. The shaving cream may be rinsed down the drain according to Flinn Suggested Disposal Method #26b.

Tips

- Have fun! Safety is a serious topic and rules must be followed. However, many teachers use humor and fun to capture their students' attention. This demo is sure to be one of your students' favorite and if you catch your students not wearing their goggles, you can just say "remember the pie."
- Shaving cream is preferred over whipping cream because it is a thicker foam, easier to clean off a face, and not as sticky.
- This demonstration can also be performed as a "surprise." Have a colleague sneak up on you when you are lecturing about safety goggles (and wearing your goggles) and "surprise" you and your class with the shaving cream accident. Remember, the volunteer must always be a willing volunteer.

Discussion

Before students perform their first laboratory experiment, laboratory safety rules should be explained and a safety contract provided describing all the rules. One of rules must be to wear safety goggles whenever heat, glassware or chemicals are used. Simple demonstrations such as this one will help students understand the reasons behind the rules and, hopefully, remember and respect the rules at all times.

Connecting to the National Standards

This laboratory activity relates to the following National Science Education Standards (1996):

Unifying Concepts and Processes: Grades K–12

Evidence, models, and explanation

Form and function

Content Standards: Grades 5–8

Content Standard F: Science in Personal and Social Perspectives, personal health

Content Standard G: History and Nature of Science, history of science

Content Standards: Grades 9–12

Content Standard F: Science in Personal and Social Perspectives, personal and community health

Content Standard G: History and Nature of Science, nature of scientific knowledge

Acknowledgment

Special thanks to the late George Hague, St. Mark's School, Dallas, Texas for bringing this demonstration to our attention.

Reference

Bilash, B., Gross, G. R., Koob, J. K. *A Demo A Day, Vol. 2.—Another Year of Chemical Demonstrations*, Flinn Scientific; Batavia, IL (1998).

Materials for *Pie in the Face—Safety Demonstration* are available from Flinn Scientific, Inc.

Catalog No.	Description
AP3306	Standard Vented Goggle
AP3309	Standard Vented Goggle with fog-free lens
AP1362	Visor Goggles
AP1557	Citation, Safety Violation
AP5947	Make Your Own Colorful Goggles Kit

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.