



LAB SAFETY

PRE-AP BIOLOGY; UNIT 1 TOPIC 2

Objectives:

- I can distinguish between safe and unsafe practices in the lab
- I can identify the location of safety equipment in the classroom
- I can explain what the appropriate lab safety steps are in various scenarios (fire, cuts/burns, broken glass, etc)

WHY DO WE TALK ABOUT LAB SAFETY?

- Have any of you experienced what happens when you don't follow lab safety?

msnbc.com staff and news service reports
updated 4/13/2011 7:44:00 PM ET

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NEW HAVEN, Conn. — A Yale University student nearing graduation was killed inside a school chemistry lab when her hair was pulled into a piece of machine-shop equipment, school officials said Wednesday.

Michele Dufault, a senior majoring in physics and astronomy, died Tuesday night after her hair became caught in a fast-spinning lathe, university President Richard Levin said. Her body was found by other students who had been working in the building, he said.

"This is a true tragedy," Levin wrote in a message to Yale students and faculty.

In a Facebook profile picture, Dufault is shown with long brown hair that fell below her shoulders. She died from accidental asphyxia by neck compression, according to the Connecticut medical examiner's office.

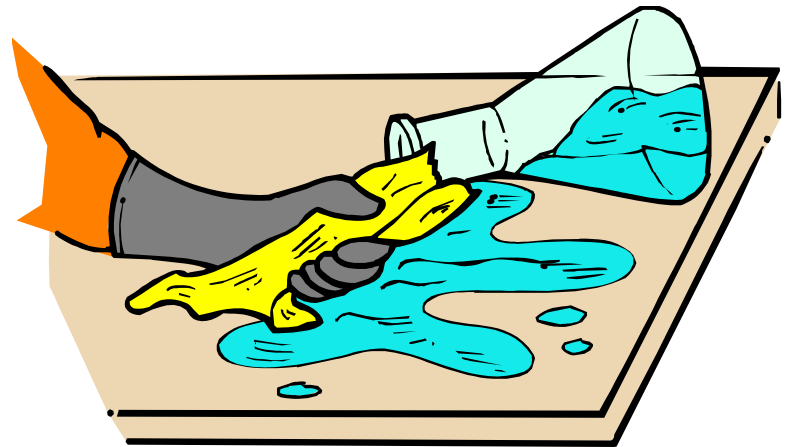


Facebook

Michele Dufault died in an apparent accident Tuesday night.

GENERAL SAFETY RULES

1. Listen to or read instructions carefully before attempting to do anything.
2. Wear proper protective gear and appropriate clothing.
3. Notify your teacher if any spills or accidents occur.



GENERAL SAFETY RULES

4. After handling chemicals, always wash your hands with soap and water.
5. During lab work, keep your hands away from your face and tie back your hair.



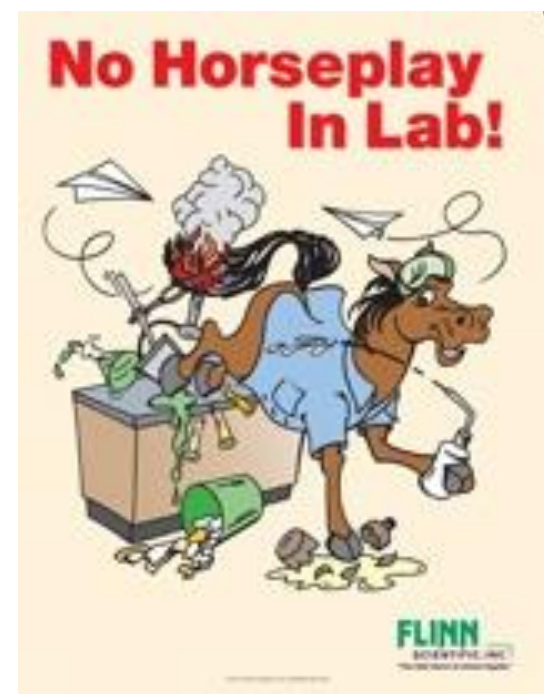
GENERAL SAFETY RULES

6. Know the location lab safety equipment.
7. Keep your work area uncluttered. Take to the lab station only what is necessary.



GENERAL SAFETY RULES

8. Never put anything into your mouth during a lab experiment.
9. Clean up your lab area at the conclusion of the laboratory period.
10. Never “horse around” or play practical jokes in the laboratory.



BEHAVIOR IN THE SCIENCE CLASSROOM

- Students **should not touch equipment** unless given proper instructions and permission by the teacher
- Always read your lab procedure!
- Food, drink, and gum are a NO!
- Minimize clutter



LAB APPROPRIATE CLOTHING

- Full-coverage shoes
- Tie Hair Back
- Roll up loose sleeves
- Jersey Material: will melt!



LAB SAFETY EQUIPMENT

- It is safer for your eyes if you wear **glasses**, rather than contact lenses.
- Goggles with vents vs. goggles without vents
- Sometimes if chemicals:
Aprons and Gloves



LAB SAFETY EQUIPMENT

- Fire Extinguisher
- Fire Blanket: used for fires on hair or clothing
- Eye Wash



EQUIPMENT USAGE

- “The cost of replacing glassware or equipment caused by **negligence** could be the responsibility of the student”
- What is negligence?

neg·li·gence

/ˈnegləjəns/ 

noun

1. failure to take proper care in doing something:
"some of these accidents are due to negligence"

GLASSWARE SAFETY



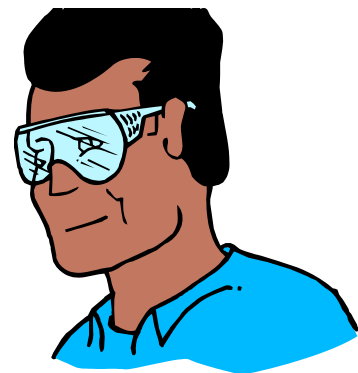
1. Chipped or cracked glassware should **not** be used. Show it to the teacher.
2. Broken glassware should not be disposed of in a classroom trashcan. There is a **special glass disposal container** for it.
3. If a piece of glassware gets broken, **do not** try to clean it up by yourself. Notify the teacher.



CHEMICAL SAFETY



1. Wear protective goggles and a lab apron whenever heating or pouring hazardous chemicals.
2. Never mix chemicals together unless you are told to do so (and then only in the manner specified).
3. Never touch, smell, or taste any chemicals.



CHEMICAL SAFETY



4. If you need to smell the odor of a chemical, waft the fumes toward your nose with one hand. Do not put your nose over the container and inhale the fumes.



5. Never pour water into a concentrated acid. Acid should be poured slowly into water.



CHEMICAL SAFETY



6. Follow the instructions of your teacher when disposing of all chemicals. (Solid wastes should not be placed in the sink)
7. Wash your hands after handling hazardous chemicals.



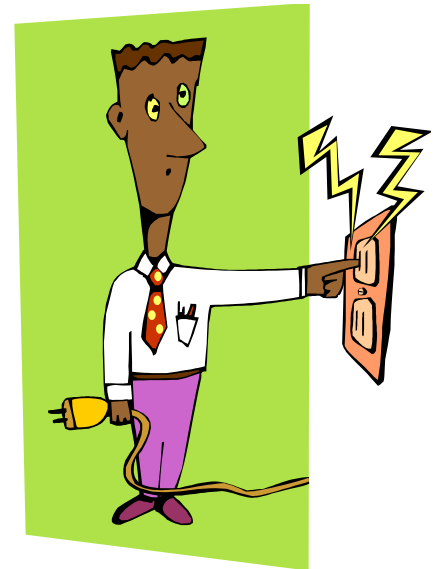
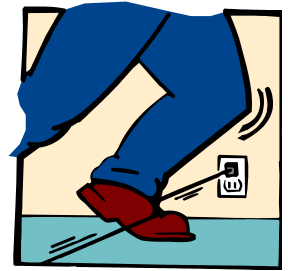
HANDLING BIOLOGICAL MATERIALS

- With any live or preserved specimens, be **RESPECTFUL!**
- Exercise caution when using sharp tools
- Dispose of all biological materials as directed by the teacher

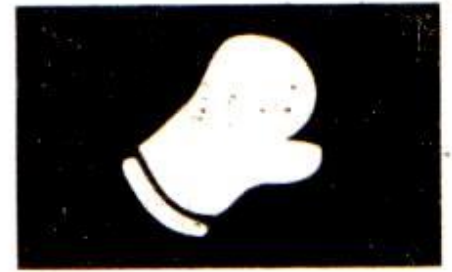
ELECTRICAL SAFETY



1. Lay electrical cords where no one can trip on them or get caught in them.
2. Be sure your hands and your lab area are dry before using electrical equipment.
3. Never poke anything into electrical outlets.



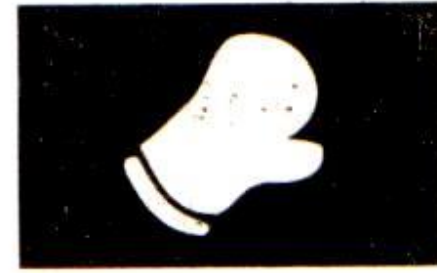
HEATING SAFETY



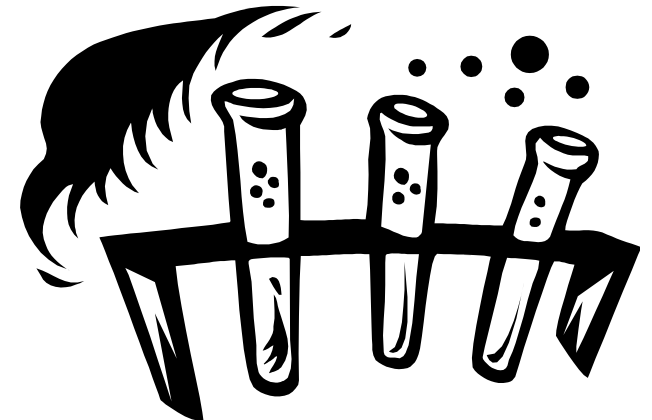
1. Let burners and hotplates cool down before touching them. Test to see if they are cool enough by bringing the back of your hand close to them.
2. Use tongs and/or protective gloves to handle hot objects.
3. Never reach across an open flame or burner.
4. Tie back long hair and do not wear loose clothing



HEATING SAFETY



5. Always point the top ends of test tubes that are being heated away from people.
6. When heating a test tube, move it around slowly over the flame to distribute the heat evenly.



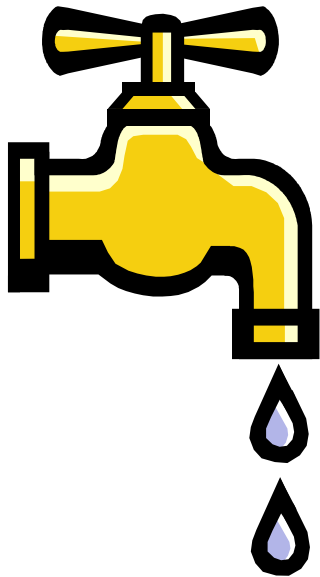
FIRST AID

Injury:

Burns

What To Do:

Immediately flush with **warm** water until burning sensation is lessened.



FIRST AID

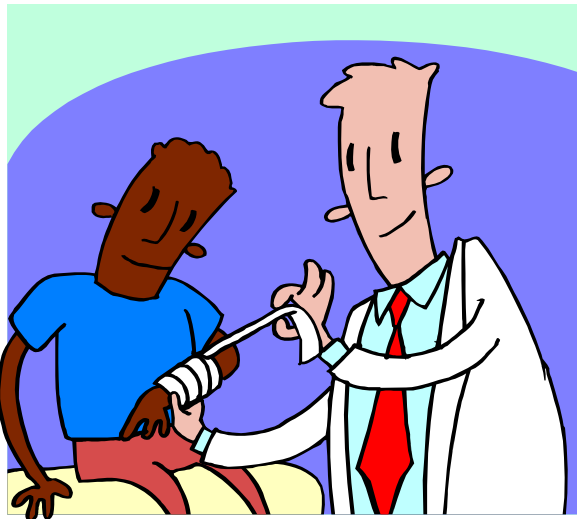


Injury:

Cuts and Bruises

What To Do:

Do not touch an open wound without safety gloves. Pressing directly on minor cuts will stop bleeding in a few minutes.



FIRST AID



Injury:

Eyes

What To Do:

Flush eyes immediately with plenty of water for several minutes.



FIRST AID

Injury:

Poisoning

What To Do:

Find out what substance was responsible and alert the teacher immediately.



FIRST AID

Injury:

Spills on the skin

What To Do:

Flush with large quantities of water.



LAB SAFETY COMIC OR POEM

- In the time given in class, create a comic strip or poem that meets the following guidelines. Whatever you do not finish will be homework.
- **Comic:** create a comic strip about the consequences of breaking lab safety rules. You must include at least three safety rules and at least 6 frames.
- **Poem:** create a poem that includes at least 3 lab safety rules. Your poem must be at least 10 lines long.