

SAFETY IN THE LABORATORY

The science lab is a safe place to experiment if you are careful. You must assume responsibility for the safety of yourself and your peers. The following are some safety rules to help guide you in protecting yourself and others from injury in the lab. Please adhere to these guidelines! Failure to do so will result in exclusion from the lab!

General Safety Rules:

- 1) The lab is to be used for serious work! **HORSEPLAY IS NOT ALLOWED!**
- 2) Do not perform experiments that are unauthorized. Always obtain the instructors permission to perform your own experiments.
- 3) Study the lab assignment **BEFORE** you come to the lab if possible. You might be tested on each lab before you are allowed to perform it. If you are in doubt about any procedures, ask your teacher for help.
- 4) **SAFETY GOGGLES (and sometimes a lab apron) MUST BE WORN WHENEVER INSTRUCTED TO WORK IN THE LAB!** Contact lenses should not be worn in the lab, if you can help it, even if goggles are worn. Lenses absorb vapors and are difficult to remove in an emergency. Failure to do so will result in a zero on the lab and removal from the room. Labs requiring goggles include but are not limited to anything with chemicals, fire, or glass. Goggles must remain on over the eyes from the start of the lab until the very last group has finished cleaning up.
- 5) **CLOSED TOED SHOES, WHICH COVER THE FEET COMPLETELY, MUST BE WORN DURING A LAB! If you forget, then you will be allowed to go get a pair in your P.E. locker, or you will sit out the lab and receive a zero on the assignment!**
- 6) **NEVER** taste any chemical substance unless you are directed specifically by your instructor to do so. **NEVER** draw materials into a pipette with your mouth. **Eating and drinking are prohibited in the lab.**
- 7) Gloves/Hot Mitts/Beaker Tongs should be used when handling very hot beakers filled with water, or other chemicals. Hot glass looks the same as cool glass, so be careful. DO NOT wash hot glass. Wait for it to cool or it can break. While waiting for the glass to cool turn it upside down (universal symbol for hot glass)
- 8) Use the safety equipment provided for you. Know the location of the fire extinguisher, safety shower, eyewash, fire blanket, and the first aid kit.
- 9) Report any accident, injury, or incorrect procedure to your instructor at once.
- 10) If you spill any **CORROSIVE CHEMICAL** on your skin, wash it off immediately with plenty of cold water.
- 11) Smother fires with a mixture of sand and cat litter, or use a fire extinguisher. If clothing should catch fire, smother it with a blanket or coat, or quench it with water from the safety shower.

12) Handle chemicals carefully. **CHECK THE LABEL OF ALL BOTTLES BEFORE REMOVING THE CONTENTS. DO NOT RETURN UNUSED PORTION TO THE MAIN STOCK BOTTLE UNLESS OTHERWISE INSTRUCTED.**

13) Keep combustible materials away from open flames. Alcohol, carbon disulfide, and acetone are just a few of the chemicals that you will be dealing with in here, and they are all combustible.

14) Handle toxic or combustible gases under the direction of your instructor. Use the FUME HOOD when such materials are present.

15) Listen to the instructor for proper disposal of materials during a lab.

16) When heating a substance in a test tube, be careful not to point the mouth of the test tube at another person or yourself.

17) Clean all glassware before you start a lab

18) Place broken glass and solid substances in designated containers. Keep insoluble waste material out of the sink. Follow the directions given in each procedure and from the instructor for the disposal of chemicals.

19) Know the correct procedure for mixing acid solutions: **ALWAYS ADD THE ACID SLOWLY TO THE WATER. NEVER ADD THE WATER TO A LARGE AMOUNT OF ACID!** If this happens, the glassware will shatter, and the contents of the container will spill all over.

20) Long hair should be tied back. Avoid wearing scarves, ties, or clothing with loose sleeves as they may catch fire. Be aware that most hair sprays are flammable and highly combustible!

21) Always clean up your station before you leave. Wash hands with soap and water after you have finished with your lab work AND have cleaned up your station.

22) **NEVER WORK ALONE IN THE LAB!**

23) You will be charged the current price for any and all broken equipment. If you break it, you have to buy it! So please be careful and use some common sense when working with the lab equipment.

24) If the fire alarm goes off we will be exiting out the side exit towards the Freeze Lobby.
STOP LAB, EXIT CALMLY

- If we are in the middle of a lab. Unplug any appliances, extinguish any flames, remove glassware from heat and calmly exit the room

Safety Symbols: Get to Know these well!



SAFETY CLOTHING

This symbol is to remind you to wear a laboratory apron over your street clothes to protect your skin and clothing from spills.



SAFETY GOGGLES

This symbol is to remind you that safety goggles are to be worn *at all times* when working in the laboratory. For some activities, your teacher may also instruct you to wear protective gloves.



GLOVES

This symbol is to remind you to wear gloves to protect your hands from contact with corrosive substances, broken glass, or hot objects.



HEATING

This symbol indicates that you should be careful not to touch hot objects with your bare hands. Use either tongs or heat-proof gloves to pick up hot objects.



FIRE

This symbol indicates the presence of an open flame. Loose hair should be tied back or covered, and bulky or loose clothing should be secured in some manner. This symbol also alerts you to the hazard of working with a flammable liquid.



CORROSIVE SUBSTANCE

This symbol indicates a caustic or corrosive substance—most frequently an acid. Avoid contact with skin, eyes, and clothing. Do not inhale vapors.



BREAKAGE

This symbol indicates an activity in which the likelihood of breakage is greater than usual, such as working with glass tubing, funnels, and so forth.



DANGEROUS VAPORS

This symbol indicates the presence of or production of poisonous or noxious vapors. *Use the fume hood* when directed to do so. Care should be taken not to inhale vapors directly. When testing an odor, use a wafting motion to direct the vapor toward your nose.



EXPLOSION

This symbol indicates that the potential for an explosive situation is present. When you see this symbol, read the instructions carefully and *follow them exactly*.



POISON

This symbol indicates the presence of a poisonous substance. Do not let such a substance come in contact with your skin and do not inhale its vapors.



ELECTRICAL SHOCK

This symbol indicates that the potential for an electrical shock exists. Read all instructions carefully. Disconnect all apparatus when not in use.



RADIATION

This symbol indicates a radioactive substance. Follow your teacher's instructions as to proper handling of such substances.



DISPOSAL

This symbol indicates that a chemical should be disposed of in a special way. Dispose of these chemicals only as directed by your teacher.



HYGIENE

This symbol is to remind you always to wash your hands thoroughly after completing a laboratory investigation. Never touch your face or eyes during a laboratory investigation.

General First Aid Techniques:

<u>SITUATION</u>	<u>SAFE RESPONSE</u>
1) Burns	Flush with cold water. See nurse if necessary.
2) Cuts and Bruises	Treat with cold water, then by the instructions included in the First Aid Kit.
3) Fainting or Collapsing	Provide the person with fresh air; have them recline so their head is lower than the body; CPR if necessary. Contact nurse.
4) Fire	Turn off all flames and gas jets; smother the person in a fire blanket; use the sand/litter or fire extinguisher to put out the fire. DO NOT use water to extinguish the fire, as water may react with the burning substance.
5) Foreign Matter in Eye	Flush with plenty of water from the eyewash for at least 15 minutes. Contact nurse.
6) Poisoning	Note the suspect poisoning agent; contact instructor for antidote, contact nurse and poison control.
7) Severe Bleeding	Apply pressure or a compress directly to the wound and get medical attention immediately.
8) General Spills	Wash area with plenty of water; use the shower if necessary.
9) Acid Spills	Use Sodium Hydrogen Carbonate (Baking Soda) on the spill and rinse area with water.
10) Base Spills	Use Boric Acid or Acetic Acid (Vinegar) on the spill, then rinse the area with water.