Name _____ Class _____ Date _____

Safety in the Laboratory

Systematic, careful lab work is an essential part of any science program. The equipment and apparatus students will use present various safety hazards. You must be aware of these hazards before students engage in any lab activity. The Lab Notes and Answers sections will guide you in properly directing the equipment use during the experiments. ***Holt Science: Laboratory Manager's Professional Reference*** contains detailed information regarding your responsibilities and liabilities as the lab manager.

Photocopy the following information for students. These safety rules always apply in the lab.

1. **Always wear a lab apron and safety goggles.** Wear these safety devices whenever you are in the lab, not just when you are working on an experiment.
2. **No contact lenses in the lab.** Contact lenses should not be worn during any investigations in which you are using chemicals (even if you are wearing goggles). In the event of an accident, chemicals can get behind contact lenses and cause serious damage before the lenses can be removed. If your doctor requires that you wear contact lenses instead of glasses, you should wear eye-cup safety goggles in the lab. Ask your doctor or your teacher how to use this very important and special eye protection.
3. **Personal apparel should be appropriate for laboratory work.** On lab days, avoid wearing long necklaces, dangling bracelets, bulky jewelry, and bulky or loose-fitting clothing. Long hair should be tied back. Loose, flopping, or dangling items may get caught in moving parts, accidentally contact electrical connections, or interfere with the investigation in some potentially hazardous manner. In addition, chemical fumes may react with some jewelry, such as pearls, and ruin them. Cotton clothing is preferable to wool, nylon, or polyesters. Wear shoes that will protect your feet from chemical spills and falling objects—no open-toed shoes or sandals and no shoes with woven leather straps.
4. **NEVER work alone in the laboratory.** Work in the lab only while under the supervision of your teacher. Do not leave equipment unattended while it is in operation.
5. **Only books and notebooks needed for the activity should be in the lab.** Only the lab notebook and perhaps the textbook should be used. Keep other books, backpacks, purses, and similar items in your desk, locker, or designated storage area.
6. **Read the entire activity before entering the lab.** Your teacher will review any applicable safety precautions before you begin the lab activity. If you are not sure of something, ask your teacher about it.
7. **Always heed safety symbols and cautions in the instructions for the experiments, in handouts, and on posters in the room, and always heed cautions given verbally by your teacher.** They are provided for your safety.
8. **Know the proper fire drill procedures and the locations of fire exits and emergency equipment.** Make sure you know the procedures to follow in case of a fire or other emergency.

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9. **If your clothing catches on fire, do not run; WALK to the safety shower, stand under the showerhead, and turn the water on.** Call to your teacher while you do this.
10. **Report all accidents to the teacher IMMEDIATELY, no matter how minor.** In addition, if you get a headache or feel ill or dizzy, tell your teacher immediately.
11. **Report all spills to your teacher immediately.** Call your teacher, rather than cleaning a spill yourself. Your teacher will tell you if it is safe for you to clean up the spill. If it is not safe for you to clean up the spill, your teacher will know how the spill should be cleaned up safely.
12. **Design Your Own and Inquiry Lab procedures must be approved by your teacher BEFORE you begin work.**
13. **DO NOT perform unauthorized experiments or use equipment or apparatus in a manner for which they were not intended.** Use only materials and equipment listed in the activity equipment list or authorized by your teacher. Steps in a procedure should only be performed as described in the book or lab manual or as approved by your teacher.
14. **Stay alert while in the lab, and proceed with caution.** Be aware of others near you or your equipment when you are proceeding with the experiment. If you are not sure of how to proceed, ask your teacher for help.
15. **Horseplay in the lab is very dangerous.** Laboratory equipment and apparatus are not toys; never play in the lab or use lab time or equipment for anything other than their intended purpose.
16. **Food, beverages, and chewing gum are NEVER permitted in the laboratory.**
17. **NEVER taste chemicals. Do not touch chemicals or allow them to contact areas of bare skin.**
18. **Use extreme CAUTION when working with hot plates or other heating devices.** Keep your head, hands, hair, and clothing away from the flame or heating area, and turn the devices off when they are not in use. Remember that metal surfaces connected to the heated area will become hot by conduction. Gas burners should be lit only with a spark lighter. Make sure all heating devices and gas valves are turned off before leaving the laboratory. Never leave a hot plate or other heating device unattended when it is in use. Remember that many metal, ceramic, and glass items do not always look hot when they are heated. Allow all items to cool before storing them.
19. **Exercise caution when working with electrical equipment.** Do not use electrical equipment that has frayed or twisted wires. Be sure your hands are dry before you use electrical equipment. Do not let electrical cords dangle from work stations; dangling cords can cause tripping or electrical shocks.
20. **Keep work areas and apparatus clean and neat.** Always clean up any clutter made during the course of lab work, rearrange apparatus in an orderly manner, and report any damaged or missing items.
21. **Always thoroughly wash your hands with soap and water at the conclusion of each investigation.**