

## Appendix B

# Sample Safety Regulations for Science Students

While working in the science laboratory, students will have important responsibilities that do not apply to other classrooms. Students will be working with materials and apparatus that, if handled carelessly or improperly, have the potential to cause injury or discomfort.

A science laboratory can be a safe place in which to work if the student is foresighted, alert, and cautious. The following practices will be followed:

1. Report any accident to the teacher immediately, no matter how minor, including any burns, scratches, cuts, or contact with corrosive liquid (on skin or clothing).
2. Prepare for each laboratory activity by reading all instructions before coming to class. Follow all directions implicitly and intelligently. Make note of any modification in procedure given by the teacher.
3. Any science project or individually planned experiment must be approved by the teacher.
4. Use only those materials and equipment authorized by the teacher.
5. Inform the teacher immediately of any equipment that does not work properly.
6. Clean up any nonhazardous spill on the floor or work space immediately.
7. Wear appropriate eye protection, as directed by the teacher, whenever working in the laboratory or in field experiments such as rocket launches. Safety goggles must be worn during hazardous activities involving caustic/corrosive chemicals, heating of liquids, and other activities that may injure the eyes.
8. Splashes and fumes from hazardous chemicals present a special danger to people who wear contact lenses. Therefore, it is preferable for students to wear regular glasses (inside splash-proof goggles, when appropriate) rather than contact lenses during all class activities or purchase personal splash-proof goggles and wear them whenever exposure to chemicals or chemical fumes is possible.
9. Students with open skin wounds on hands must wear gloves or be excused from the laboratory activity.
10. Never carry hot equipment or dangerous chemicals through a group of students.

11. Check labels and equipment instructions carefully. Be sure correct items are used in the proper manner.
12. Be aware of any hazardous chemicals being used. Know the location of the material safety data sheets (MSDSs) and be familiar with what the sheets indicate for the hazardous chemicals being used.
13. Never taste anything or touch chemicals with the hands, unless specifically instructed to do so.
14. Test for odor of chemicals only by waving a hand above the container and sniffing cautiously from a distance.
15. Eating or drinking in the laboratory or from laboratory equipment is not permitted.
16. Use a mechanical pipette filler (never the mouth) when measuring or transferring small quantities of liquid with a pipette.
17. When heating material in a test tube, do not look into the tube or point it in the direction of any person during the process.
18. Never pour reagents back into bottles, exchange stoppers of bottles, or lay stoppers on the table.
19. When diluting acids, always pour *acids into water*, never the reverse. Combine the liquids slowly while stirring to distribute heat buildup throughout the mixture.
20. Keep hands away from face, eyes, and clothes while using solutions, specimens, equipment, or materials in the laboratory. Wash hands as necessary and wash thoroughly at the conclusion of the laboratory period.
21. To treat a burn from an acid or alkali, wash the affected area immediately with plenty of running water. If the eye is involved, irrigate it at the eyewash station without interruption for 15 minutes. Report the incident to the teacher immediately.
22. Know the location of the emergency shower, eyewash and facewash station, fire blanket, fire extinguisher, fire alarm box, and exits.
23. Know the proper fire- and earthquake-drill procedures.
24. Roll long sleeves above the wrist. Long, hanging necklaces, bulky jewelry, and excessive or bulky clothing should not be worn in the laboratory.
25. Confine long hair during a laboratory activity.
26. Do not wear sandals in the laboratory; always wear closed-toe shoes.
27. Keep work areas clean. Floors and aisles should be kept clear of equipment and materials.
28. Light gas burners only as instructed by the teacher. Be sure no volatile materials (such as alcohol or acetone) are being used nearby.
29. Use a burner with extreme caution. Keep head and clothing away from the flame and turn it off when not in use.
30. Use a fire blanket (stop, drop, and roll) to extinguish any flame on a person.

31. Dispose of laboratory waste as instructed by the teacher. Use separate, designated containers (not the wastebasket) for the following:
  - Matches, litmus paper, wooden splints, toothpicks, and so on
  - Broken and waste glass
  - Rags, paper towels, or other absorbent materials used in the cleanup of flammable solids or liquids
  - Hazardous/toxic liquids and solids
32. Place books, purses, and other personal items in the designated storage area. Take only laboratory manuals and notebooks into the working area.
33. Students are not permitted in laboratory storage rooms or teachers' workrooms without the approval of the teacher.
34. To cut small-diameter glass tubing, use a file or tubing cutter to make a deep scratch. Wrap the tubing in a paper towel before breaking the glass by pushing the glass with the thumbs in an outward direction. Fire-polish all ends.
35. When bending glass, allow time for the glass to cool before further handling. Hot and cold glass have the same appearance. Determine whether an object is hot by bringing the back of the hand close to the object.
36. Match hole sizes and tubing when inserting glass tubing into a stopper. If necessary, expand the hole first by using an appropriately sized cork borer. Lubricate the stopper hole and glass tubing with water or glycerin to ease insertion, using towels to protect the hand. Carefully twist (never push) glass tubing into stopper holes.
37. Remove all broken glass from the work area or floor as soon as possible. Never handle broken glass with bare hands; use a counter brush and dustpan.
38. Report broken glassware, including thermometers, to the teacher immediately.
39. Operate electrical equipment only in a dry area and with dry hands.
40. When removing an electrical plug from its socket, pull the plug, not the electrical cord.
41. Treat all animals in the science laboratory humanely—that is, with respect and consideration for their care.
42. Always approach laboratory experiences in a serious and courteous manner.
43. Always clean the laboratory area before leaving.
44. Students (and teacher) should wash hands with soap and water before leaving the laboratory area.

*Note:* Persistent or willful violation of the regulations will result in the loss of laboratory privileges and possible dismissal from the class.