

## Safety Regulations for Science Students

While working in the science laboratory, you will have certain important responsibilities that do not apply to other classrooms. You will be working with materials and apparatus which, if handled carelessly or improperly, have the potential to cause injury or discomfort to someone else as well as yourself.

A science laboratory can be a safe place in which to work if you, the student, are foresighted, alert, and cautious. Violating any of the following regulations will result in you being suspended from class or permanently removed from the class. The following practices will be followed:

1. An instructor must be present during the performance of all laboratory work.
2. Report any accident to the teacher immediately, no matter how minor, including reporting any burn, scratch, cut, or corrosive liquid on skin or clothing.
3. 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 instructor.
4. Any science project or individually planned experiment must be approved by the teacher.
5. Use only those materials and equipment authorized by the instructor.
6. Inform the teacher immediately of any equipment not working properly.
7. Clean up any nonhazardous spill on the floor or workspace immediately.
8. Wear appropriate eye protection, as directed by the instructor, whenever you are working in the laboratory. Safety goggles must be worn during hazardous activities involving caustic/corrosive chemicals, heating of liquids, and other activities that may injure the eyes.
9. Splashes and fumes from hazardous chemicals present a special danger to wearers of contact lenses. Therefore, students should preferably wear regular glasses (inside splash-proof goggles, when appropriate) during all class activities or purchase personal splash-proof goggles and wear them whenever exposure to chemicals or chemical fumes is possible. 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 if the chemicals being used are hazardous. Know where the material safety data sheet (MSDS) is and what it indicates for each of the hazardous chemicals you are using.
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 your 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 your instructor 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 and bulky clothing should not be worn in the laboratory.
25. Confine long hair during a laboratory activity.
26. Wear shoes that cover the toes, rather than sandals, in the laboratory.
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. Use a burner with extreme caution. Keep your head and clothing away from the flame and turn it off when not in use.
29. Use a fire blanket (stop, drop, and roll) to extinguish any flame on a person.
30. 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
31. Place books, purses, and such items in the designated storage area. Take only laboratory manuals and notebooks into the working area.
32. Students are not permitted in laboratory storage rooms or teachers' workrooms without the approval of the teacher.
33. 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 away from you with your thumbs. Fire polish all ends.
34. Hot and cold glass has the same visual appearance. Determine whether an object is hot by bringing the back of your hand close to the object.
35. Match hole sizes and tubing when inserting glass tubing into a stopper. If necessary, expand the hole first by using an appropriate size 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.
36. 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.
37. Report broken glassware, including thermometers, to the instructor immediately.
38. Operate electrical equipment only in a dry area and with dry hands.
39. When removing an electrical plug from its socket, pull the plug, not the electrical cord.
40. Treat all animals in the science laboratory humanely; that is, with respect and consideration for their care.
41. Always approach laboratory experiences in a serious and courteous manner.
42. Always clean the laboratory area before leaving.

43. Students and teacher wash hands with soap and water before leaving the laboratory area.
44. When heating volatile or flammable materials, use a water bath; that is, heat the materials in or over heated water, using a hot plate to heat the water. Extinguish all open flames.
45. Exercise caution in using scissors, scalpels, dissecting needles, and other sharp-edged instruments. Pass them with handles extended when handing them to other persons.
46. Wash all sharp-edged and pointed instruments separately from other equipment.
47. Use great care when working with ether or other volatile liquids. Windows and doors should be opened for greatest possible ventilation. Be sure that caps or lids of containers used for chemicals are securely closed.
48. Rinse dissection specimens occasionally or whenever fumes or chemicals are released in the dissection process.
49. Never handle animals in the laboratory unless directed to do so by the instructor.
50. Never insert your fingers or objects through the wire mesh of animal cages to pet or tease the animals.
51. Notify the instructor at once if an animal bites you.
52. Never bring animals or poisonous plants to school.
53. Never open petri dishes containing bacterial or fungal growth unless directed to do so by the instructor.
54. Dispose of all discarded bacterial and fungal cultures by sterilization as directed by the instructor.
55. Inform the teacher immediately of any equipment not working properly.
56. When working with lasers or apparatus that produce X rays, microwaves, or ultraviolet rays, make certain that proper shielding and other precautions are used.
57. Use the fume hood whenever noxious, corrosive, or toxic fumes are produced or released.
58. Be sure all glassware is clean before use. Clean glassware thoroughly after use. Residue may cause errors in new experiments or cause a violent reaction or explosion.

**The following actions will result in both immediate removal from class as well as being dropped from the class:**

- Lifting the plastic cover and /or pushing the “Big Red Button” in the front of the classroom.
- Misuse of safety equipment including, but not limited to
  - Eyewash stations
  - Emergency showers
  - Fire extinguishers
  - Fire blanket
- Removal of any materials or equipment from the classroom or laboratory
- Vandalizing school equipment or furniture.
- Endangering or causing harm to others.

***Note: Persistent or willful violation of the regulations will result in the loss of laboratory privileges and possible dismissal from the class. Please see the "Student Safety Contract" on the following page.***

## Student Safety Contract

Student's name: \_\_\_\_\_

School: \_\_\_\_\_ Teacher: \_\_\_\_\_ Date: \_\_\_\_\_

The student has received specific instruction regarding the use, function, and location of the following:

- |  |                          |
|--|--------------------------|
| Aprons, gloves   | <input type="checkbox"/> |
| Chemical-spill kit   | <input type="checkbox"/> |
| Eye-protective devices (goggles, face shield, safety shield)             | <input type="checkbox"/> |
| Eyewash fountain, drench spray, and drench shower                        | <input type="checkbox"/> |
| Fire extinguisher  | <input type="checkbox"/> |
| Fire blanket   | <input type="checkbox"/> |
| First-aid kit  | <input type="checkbox"/> |
| Heat sources (burners, hot plate, microwave) and techniques in their use | <input type="checkbox"/> |
| Material safety data sheets (MSDSs)                                      | <input type="checkbox"/> |
| Waste-disposal containers for glass, chemicals, matches, paper, wood     | <input type="checkbox"/> |

The student will abide by the "Safety Regulations for Science Students" to prevent accidents and injury to herself or himself and others and will:

- Follow all additional instructions given by the teacher.
- Conduct herself or himself in a responsible manner at all times in the laboratory.

List below any special allergies or sensitivities (e.g., to plants, animals, pollen, foods, chemicals, bee stings) that may affect the student's safety in the laboratory or on field trips:

\_\_\_\_\_  
\_\_\_\_\_

Check this box if the student wears contact lenses:

### Student's Statement

I have in my possession and have read the "Safety Regulations for Science Students" and agree to abide by them at all times while in the laboratory. I have received specific safety instruction as indicated above.

\_\_\_\_\_  
Signature of student

\_\_\_\_\_  
Date

### Parent's or Guardian's Statement

I have read the "Safety Regulations for Science Students" and give my consent for the student who has signed the preceding statement to engage in laboratory activities using a variety of science equipment and materials, including those described. I pledge my cooperation in urging that she or he observe the safety regulations prescribed.

\_\_\_\_\_  
Signature of parent or guardian

\_\_\_\_\_  
Date

Return the completed and signed form to \_\_\_\_\_ by \_\_\_\_\_.

