

# BIOLOGICAL SCIENCE LABORATORY REGULATIONS

## School District

The following regulations have been compiled for the safety of students performing laboratory work in biological science classes. Strict observance of the regulations is mandatory. All students in the school district are to follow these regulations, rather than any conflicting instructions in textbooks or laboratory manuals.

*Students and parents are to read the regulations, sign the form, and return the form to the instructor. This procedure must be completed before a student can begin any laboratory activity. The student should keep a copy of the regulations in his or her notebook for future reference.*

### General

1. An instructor must be present during the performance of all laboratory work.
2. Prepare for each laboratory activity by reading all instructions before coming to class. Follow all directions implicitly and intelligently. Make a note of any modification in procedure given by the instructor.
3. Always approach laboratory experiences in a serious and courteous manner.
4. Use only those materials and equipment authorized by the instructor. Any science project or individually planned experiment must be approved by the teacher.
5. Know the proper fire- and earthquake-drill procedures.
6. Roll long sleeves above the wrist. Long, hanging necklaces, bulky jewelry, and excessive and bulky clothing should not be worn in the laboratory.
7. Confine long hair during a laboratory activity.
8. Wear shoes that cover the toes, rather than sandals, in the laboratory.
9. 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.
10. 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.

11. Place books, purses, and other such items in the designated storage area. Take only laboratory manuals and notebooks into the working area.
12. Report any accident to the teacher immediately, no matter how minor. Included are reports on any burn, scratch, cut, or corrosive liquid on skin or clothing.
13. Students with open skin wounds on hands must wear gloves or be excused from the laboratory activity.
14. Eating or drinking in the laboratory or from laboratory equipment is not permitted.
15. Students are not permitted in laboratory storage rooms or teachers' workrooms without the approval of the teacher.

### Handling Equipment

16. Inform the teacher immediately of any equipment not working properly.
17. Report broken glassware, including thermometers, to the instructor immediately.
18. Operate electrical equipment only in a dry area and with dry hands.
19. When removing an electrical plug from its socket, pull the plug, not the electrical cord.
20. When heating material in a test tube, do not look into the mouth of the tube or point it in the direction of any person during the process.
21. 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.
22. Know the location and operation of the emergency shower, eyewash and facewash fountain, fire blanket, fire extinguisher, fire alarm box, and exits.
23. Light gas burners only as instructed by the teacher. Be sure no volatile materials (such as alcohol or acetone) are being used nearby.
24. Use a burner with extreme caution. Keep your head and clothing away from the flame and turn it off when not in use.
25. Use a fire blanket to extinguish any flame on a person (see "stop, drop, and roll" procedure in Chapter 2, section C).
26. Use the fume hood whenever noxious, corrosive, or toxic fumes are produced or released.

27. Exercise caution in using scissors, scalpels, dissecting needles, and other sharp-edged instruments. Pass them with handles extended when handing them to other persons.
28. Wash all sharp-edged and pointed instruments separately from other equipment.
29. Match hole size 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.

### Handling Chemicals

30. Check labels and equipment instructions carefully. Be sure correct items are used in the proper manner.
31. 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.
32. Never pour reagents back into bottles, exchange stoppers of bottles, or lay stoppers on the table.
33. 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.
34. Keep hands away from face, eyes, and clothes while using solutions, specimens, equipment, or materials in the laboratory.
35. 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.
36. Never carry hot equipment or dangerous chemicals through a group of students.
37. Use a mechanical pipette filler (never the mouth) when measuring or transferring small quantities of liquid with a pipette.
38. Never taste anything or touch chemicals with the hands unless specifically instructed to do so.

### Plants and Animals

39. Rinse dissection specimens occasionally or whenever fumes or chemicals are released in the dissection process.

40. Never handle animals in the laboratory unless directed to do so by the instructor.
41. Never insert your fingers or objects through the wire mesh of animal cages to pet or tease the animals.
42. Notify the instructor at once if an animal bites you.
43. Never bring animals or poisonous plants to school.

### Bacteria and Fungi

44. Never open petri dishes containing bacterial or fungal growth unless directed to do so by the instructor.
45. Dispose of all discarded bacterial and fungal cultures by sterilization as directed by the instructor.

### Cleanup and Disposal

46. 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.
47. Keep work areas clean. Floors and aisles should be kept clear of equipment and materials.
48. Clean up any spill on the floor or work space immediately.
49. 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
50. 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.
51. Always clean the laboratory area before leaving.
52. Students and teacher 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.*

*Please see the "Student Safety Contract—Biological Science" on the following page.*