

## Student Science Safety Rules and Regulations

Science is a hands-on laboratory class. You will be doing many laboratory activities, which require the use of potentially hazardous materials and equipment. A positive attitude toward safety is imperative. Students should not fear doing experiments, using reagents, or equipment, but should respect them for potential hazards.

Safety in the science classroom is the highest priority for students, teachers, and parents. To ensure a safe science classroom, the following set of rules has been determined for LCPS Science Classrooms. These rules must be followed at all times.

### General Guidelines

1. Conduct yourself in a responsible manner at all times in the laboratory.
2. Follow all written and verbal instructions. If you do not understand a direction or part of a procedure, ask your teacher for help before proceeding.
3. Never work alone. No student may work in the laboratory without a teacher present.
4. Do not touch any equipment, chemicals, or other materials in the laboratory area until you are instructed to do so.
5. Do not eat food, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
6. Perform only those experiments authorized by your teacher. Never do anything in the laboratory that is not in the laboratory procedure or is authorized by your teacher. Carefully follow all instructions.
7. Be prepared for your work in the laboratory. Read all procedures thoroughly before entering the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
8. Observe good housekeeping practices. Work areas should be kept clean and tidy at all times. Bring only your laboratory instructions, worksheets, and/or reports to the work area. Other materials (books, purses, backpacks, etc.) should be stored in the classroom area.
9. Keep aisles clear. Push your chair under the desk when not in use.
10. Know the locations and operating procedures of all safety equipment including the first aid kit, eyewash station, safety shower, fire extinguisher, and fire blanket. Know where the fire alarm and the exits are located.
11. Always work in a well-ventilated area. Use the fume hood when working with volatile substances or poisonous vapors. Never place your head into the fume hood.
12. Be alert and proceed with caution at all times in the laboratory. Notify the teacher immediately of any unsafe conditions you observe.
13. Dispose of all chemical waste properly. Never mix chemicals in sink drains. Sinks are to be used only for water and those solutions designated by the teacher. Solid chemicals, metals, matches, filter paper, and all other insoluble materials are to be disposed of in the proper waste containers, not in the sink. Check the label of all waste containers twice before adding your chemical waste to the container.
14. Labels and equipment instructions must be read carefully before use. Set up and use the apparatus as directed in the lab instructions or by your teacher.
15. Keep hands away from face, eyes, mouth and body while using chemicals or preserved specimens. Wash your hands with soap and water after performing all experiments. Clean (with soap), rinse, and wipe dry all work surfaces (including the sink) and apparatus at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
16. Experiments must be personally monitored at all times. You will be assigned a laboratory station at which to work. Do not wander around the room, distract other students, or interfere with the laboratory experiments of others.
17. Students are never permitted in the science storage rooms or preparation areas unless given specific permission by their teacher.
18. Know what to do if there is a fire drill during a laboratory period; containers must be closed, gas valves turned off, fume hoods turned off, and any electrical equipment turned off.
19. Handle all living organisms used in a laboratory activity in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.
20. When using knives and other sharp instruments, always carry with tips and points pointing down and away. Always cut away from your body. Never try to catch falling sharp instruments. Grasp sharp instruments only by the handles.

### Clothing

21. Any time chemicals, heat, or glassware are used, students will wear laboratory goggles.
22. Notify your teacher if you wear contact lenses.
23. Dress properly during a laboratory activity. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Shoes must completely cover the foot.

### Accidents and Injuries

24. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the teacher immediately, no matter how trivial it may appear.

25. If you or your lab partner is hurt, immediately alert your teacher.
26. If a chemical should splash in your eye(s) or on your skin, immediately flush with running water from the eyewash station or safety shower for at least 15 minutes. Notify the teacher immediately.
27. Report any broken laboratory equipment to the teacher immediately.

### Handling Chemicals

28. All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemicals unless specifically instructed to do so.
29. Check the label on chemical bottles twice before removing any of the contents. Take only as much chemical as you need.
30. Never return unused chemicals to their original containers.
31. Never use mouth suction to fill a pipet. Use a rubber bulb or pipet pump.
32. When transferring reagents from one container to another, hold the containers away from your body.
33. Acids must be handled with extreme care. You will be shown the proper method for diluting acids. Always add acid to water, swirl or stir the solution and be careful of the heat produced, particularly with sulfuric acid.
34. Handle flammable hazardous liquids over a pan to contain spills. Never dispense flammable liquids anywhere near an open flame or source of heat.
35. Never remove chemicals or other materials from the laboratory area.
36. Take great care when transferring acids and other chemicals from one part of the laboratory to another. Hold them securely and walk carefully.

### Handling Glassware and Equipment

37. Carry glass tubing, especially long pieces, in a vertical position to minimize the likelihood of breakage and injury.
38. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass. Place broken or waste glassware in the designated glass disposal container.
39. Inserting and removing glass tubing from rubber stoppers can be dangerous. Always lubricate glassware (tubing, thistle tubes, thermometers, etc.) before attempting to insert it in a stopper.
40. When removing an electrical plug from its socket, grasp the plug, not the electrical cord. Hands must be completely dry before touching an electrical switch, plug, or outlet.
41. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.

42. Report damaged electrical equipment immediately. Look for things such as frayed cords, exposed wires, and loose connections. Do not use damaged electrical equipment.

43. If you do not understand how to use a piece of equipment, ask the teacher for help.

44. Do not immerse hot glassware in cold water; it may shatter.

### Heating Substances

45. Exercise extreme caution when using a gas burner. Take care that hair, clothing and hands are a safe distance from the flame at all times. Do not put any substance into the flame unless specifically instructed to do so. Never reach over an exposed flame. Light burners only as instructed by the teacher.
46. Never leave a lit burner unattended. Never leave anything that is being heated or is visibly reacting unattended. Always turn the burner or hot plate off when not in use.
47. You will be instructed in the proper method of heating and boiling liquids in test tubes. Do not point the open end of a test tube being heated at yourself or anyone else.
48. Heated metals and glass remain very hot for a long time. They should be set aside to cool and picked up with caution. Use tongs or heat-protective gloves if necessary.
49. Never look into a container that is being heated.
50. Do not place hot apparatus directly on the laboratory desk. Always use an insulating pad. Allow plenty of time for hot apparatus to cool before touching it. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

I, \_\_\_\_\_ (student's printed name) have received, read and agree to follow the science safety rules and procedures listed above. I further agree to abide by all written and verbal instructions given in class. I understand that I may ask my instructor at any time about rules and regulations that are not clear to me. I am aware that my failure to follow these science laboratory rules and regulations will subject me to possible disciplinary action.

Dear Parent or Guardian:

Please read the list of safety rules above. Your signature on this form indicates that you have read this Student Science Safety Rules and Regulations, are aware of the measures taken to make the science laboratory safer, and will instruct your son/daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

Parent/Guardian Signature

Date

## Student Science Safety Acknowledgement Form for Working with Microorganisms

The laboratory can be a hazardous place. It is therefore critical and an expectation that students adhere to the following specific protocols and standards to help make it a safer place to work and learn. Students who are immune compromised or pregnant are advised to let the teacher know in confidentiality, should alternative activities be required to insure health and safety. Culturing and use of live bacteria is not recommended at the elementary/middle schools and introductory level high school science courses.

1. Eating, drinking, and the application of cosmetics are strictly prohibited in the laboratory. Food must not be stored in a refrigerator with microorganisms.
2. Open toed shoes are not permitted; e.g. sandals, flip-flops.
3. All personal belongings (books, purses, backpacks) must be removed from the work surface.
4. Tie back long hair.
5. Keep hands away from the face at all times.
6. Cover all cuts, broken skin, or wounds to reduce or prevent exposure.
7. Gloves and indirectly vented chemical splash goggles must be worn whenever students are working with microorganisms.
8. If gloves become soiled, change immediately, following the proper protocol.
9. Always wash hands with soap and water after removing gloves.
10. DO NOT put pencils or pens in the mouth while working with microorganisms.
11. Cover and protect exposed wounds.
12. Laboratory coats or aprons must be worn.
13. Locate all fire extinguishers in the microbiology laboratory and know how to use if allowed.
14. Know the location of the eyewash station and how to operate it.
15. Disinfect the work space before and after each investigation. First apply a green cleaner and then use 70% alcohol or 10% bleach solution to disinfect. Leave on the surface for appropriate contact time of approximately 10-15 minutes (check recommended manufacturer's contact time).
15. Handle all bacterial cultures with CAUTION!!
16. Use a pipetting device, never pipet by mouth.
17. Notify the instructor immediately if a culture has been spilled.
18. Place all materials in the appropriately labeled disposal containers upon completion of the laboratory investigation.
19. Cultures must never leave the laboratory workspace.
21. If there is a fire drill, turn off all flames and electrical equipment, if possible, and exit in an orderly fashion.

Parents and students should sign as indicated below before starting the activity. I have read and agree to follow the above safety guidelines. I agree to report any accident or injury to the instructor immediately. I will never use any equipment or supplies without obtaining permission from the instructor.

\_\_\_\_\_  
Print Student Name

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

I have read and reviewed the above guidelines with my child.

\_\_\_\_\_  
Print Parent Name

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date

From: <http://www.nsta.org/portals/safety.aspx>