

Laboratory Safety Guidelines

One of the first things any scientist learns is that working in the laboratory can be an exciting experience. However, the laboratory can also be quite dangerous if proper safety rules are not followed at all times. In order to prepare yourself for a safe year in the laboratory, read over the following safety guidelines. Then read them a second time. Make sure you understand each rule. If you do not, ask your teacher to explain any rules you are unsure of.

Dress Code

1. Many materials in the laboratory can cause eye injury. To protect yourself from possible injury, always wear safety goggles whenever you are working with chemicals, burners, or any substance that might get into your eyes.
2. Laboratory aprons or coats should also be worn whenever working with chemicals or heated substances.
3. Tie back long hair in order to keep it away from any chemicals, burners, and candles, or other laboratory equipment.
4. Any article of clothing or jewelry that can hang down and touch chemicals and flames should be removed or tied back before working in the laboratory.

General Safety Rules

5. Read all directions for an experiment several times. Follow the directions exactly as they are written. If you are in doubt about any part of the experiment, ask your teacher for assistance.
6. Never perform activities that are not authorized by your teacher. Never “experiment” on your own.
7. Never handle any equipment unless you have specific permission.
8. Take extreme care not to spill any material in the laboratory. If spills occur, ask your teacher immediately about the proper clean-up procedure. Never pour chemicals or other substances into the sink or trash container unless instructed to do so.
9. Never eat in the laboratory. Wash your hands before and after each experiment.

First Aid

10. Report all accidents to your teacher immediately.
11. Learn what to do in case of specific accidents such as getting acid in your eyes or on your skin. (Rinse acids on your body with lots of water.) Know the location of the eye wash station.
12. Become aware of the location of the first aid kit. However, your teacher should administer any required first aid due to injury. Or your teacher may suggest sending you to the school nurse or contacting a physician.
13. Know where and how to report an accident or fire. Find out the location of the fire extinguisher, phone, and fire alarm. Report any fires to your teacher at once.

Heating and Fire Safety (Primarily for Chemistry Classes)

14. Never use any heat source such as a candle or burner without wearing safety goggles.
15. Never heat any chemical that you are not instructed to heat. A chemical that is harmless when cool can be dangerous when heated.
16. Always maintain a clean work area and keep all materials away from flames.
17. Never reach across a flame.
18. Make sure you know how to light a Bunsen burner. (Your teacher will demonstrate the proper procedure for lighting a burner.) If the flame leaps out of a burner toward you, turn the gas off immediately. Do not touch the burner, and never leave a lighted burner unattended.

19. Always point a test tube or bottle that is being heated away from you and others. Chemicals can splash or boil out of a heated test tube.
20. Never heat a liquid in a closed container. The expanding gases produced may blow the container apart, injuring you or others.
21. Never pick up any container that has been heated without first holding the back of your hand near it. If you can feel the heat on the back of your hand, the container may be too hot to handle. Always use a clamp or tongs when handling hot containers.

Using Chemicals Safely

22. Never mix chemicals for the “fun of it.” You might produce a dangerous, possibly explosive substance.
23. Never touch, or smell any chemical that you do not know for a fact is harmless. Many chemicals are poisonous. If you are instructed to note the fumes in an experiment, always gently wave your hand over the opening of a container and direct the fumes toward your nose. Do not inhale the fumes directly from the container.
24. Use only those chemicals needed in the activity. Keep the lids closed when a chemical is not being used. Notify your teacher when chemicals are spilled.
25. Dispose of all chemicals as instructed by your teacher. To avoid contamination, never return chemical to their original containers.
26. Be extra careful when working with acids or bases. Pour such chemicals over the sink, not over your lab table.
27. When diluting an acid, always pour the acid into water. Never pour water into the acid.
28. Rinse any acids off your skin or clothing with water. Immediately notify your teacher of any acid spill.

Using Glassware Safely

29. Never heat glassware that is not thoroughly dry. Use a wire screen to protect glassware from the flame of a Bunsen burner.
30. Keep in mind that hot glassware will not appear hot. Never pick up any glassware without first checking to see if it is hot.
31. Never use broken or chipped glassware. If glassware breaks, notify your teacher and dispose of the glassware in the proper trash container.
32. Never eat or drink from laboratory glassware. Always thoroughly clean any glassware before putting it away.

Animal Safety

33. No experiments that cause pain, discomfort or harm to animals should be done in class.
34. Preserved animal specimens should be handled respectfully.
35. Clean your hands thoroughly after handling animals or animal specimens

Using Sharp Instruments

36. Handle scalpels or razor blades with extreme care. Never cut any materials toward you; always cut away from you.
37. Notify your teacher immediately if you are cut in the laboratory.

End-of-Experiment Rules

38. When an experiment is completed, always clean up your work area and return all equipment to its proper place. Make sure your table, the counters, and equipment used are clean and dry.
39. Wash your hands.