One of the first things a scientist learns is that

working in the laboratory can be an exciting

experience. But the laboratory can also be

quite dangerous if proper safety rules are not

followed at all times. To prepare yourself for

a safe year in the laboratory, read over the following safety rules. 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, wear safety goggles

whenever you are working with chemicals,

burners, or any substance that might

get into your eyes. Never wear contact

lenses in the laboratory.

2. Wear a laboratory apron or coat whenever

you are working with chemicals or

heated substances.

3. Tie back long hair to keep your hair away

from any chemicals, burners and candles,

or other laboratory equipment.

4. Remove or tie back any article of clothing

or jewelry that can hang down and touch

chemicals and flames. Do not wear sandals

or open-toed shoes in the laboratory.

Never walk around the laboratory barefoot

or in socks.

**General Safety Rules**

5. Be serious and alert when working in the

laboratory. Never “horse around” in the

laboratory.

6. Be prepared to work when you arrive in

the laboratory. Be sure that you understand

the procedure to be employed in

any laboratory investigation and the possible

hazards associated with it.

7. Read all directions for an investigation

several times. Follow the directions

exactly as they are written. If you are in

doubt about any part of the investigation,

ask your teacher for assistance.

8. Never perform activities that are not

authorized by your teacher. Obtain permission

before “experimenting” on your

own.

9. Never handle any equipment unless you

have specific permission.

10. Take extreme care not to spill any material

in the laboratory. If spills occur, ask

your teacher immediately about the

proper cleanup procedure. Never simply

pour chemicals or other substances into

the sink or trash container.

11. Never eat or taste anything or apply cosmetics

in the laboratory unless directed to

do so. This includes food, drinks, candy,

and gum, as well as chemicals. Wash your

hands before and after performing every

investigation.

12. Know the location and proper use of

safety equipment such as the fire extinguisher,

fire blanket, first-aid kit, safety

shower, and eyewash station.

13. Notify your teacher of any medical problems

you may have, such as allergies or

asthma.

14. Keep your laboratory area clean and

free of unnecessary books, papers, and

equipment.

**First Aid**

15. Report all accidents, no matter how

minor, to your teacher immediately.

16. Learn what to do in case of specific accidents

such as getting acid in your eyes or

on your skin. (Rinse acids off your body

with lots of water.)

17. Become aware of the location of the first aid kit. Your teacher should administer

any required first aid due to injury. Or

your teacher may send you to the school

nurse or call a physician.

18. Know where and how to report an accident

or fire. Find out the location of the

fire extinguisher, phone, and fire alarm.

Keep a list of important phone numbers

such as the fire department and school nurse near the phone. Report any fires to

your teacher at once.

**Heating and Fire Safety**

19. Never use a heat source such as a candle

or burner without wearing safety goggles.

20. Never heat a chemical you are not

instructed to heat. A chemical that is

harmless when cool can be dangerous

when heated.

21. Maintain a clean work area and keep all

materials away from flames.

22. Never reach across a flame.

23. 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. It may be hot. And never

leave a lighted burner unattended.

24. 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.

25. Never heat a liquid in a closed container.

The expanding gases produced may blow

the container apart, injuring you or others.

26. Never pick up a 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. Use a clamp,

tongs, or heat-resistant gloves when handling

hot containers.

**Using Chemicals Safely**

27. Never mix chemicals for the “fun of it.”

You might produce a dangerous, possibly

explosive, substance.

28. Never touch, taste, or smell a 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 investigation,

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.

29. Use only those chemicals needed in the

investigation. Keep all lids closed when a

chemical is not being used. Notify your

teacher whenever chemicals are spilled.

30. Dispose of all chemicals as instructed by

your teacher. To avoid contamination,

never return chemicals to their original

containers.

31. Be extra careful when working with acids

or bases. Pour such chemicals over the

sink, not over your workbench.

32. When diluting an acid, pour the acid into

water. Never pour water into the acid.

33. Rinse any acids off your skin or clothing

with water. Immediately notify your

teacher of any acid spill.

**Using Glassware Safely**

34. Never force glass tubing into a rubber

stopper. A turning motion and lubricant

will be helpful when inserting glass tubing

into rubber stoppers or rubber tubing.

Your teacher will demonstrate the proper

way to insert glass tubing.

35. Never heat glassware that is not thoroughly

dry. Use a wire screen to protect

glassware from any flame.

36. Keep in mind that hot glassware will not

appear hot. Never pick up glassware

without first checking to see if it is hot.

37. If you are instructed to cut glass tubing,

fire polish the ends immediately to

remove sharp edges.

38. Never use broken or chipped glassware.

If glassware breaks, notify your teacher

and dispose of the glassware in the

proper trash container.

39. Never eat or drink from laboratory glassware.

Clean glassware thoroughly before

putting it away.

**Using Sharp Instruments**

40. Handle scalpels or razor blades with

extreme care. Never cut material toward

you; cut away from you.

41. Be careful when handling sharp, pointed

objects such as scissors, pins, and dissecting

probes.

42. Notify your teacher immediately if you

cut yourself or receive a cut.

**Handling Living Organisms**

43. No investigations that will cause pain,

discomfort, or harm to mammals, birds,

reptiles, fish, and amphibians should be

done in the classroom or at home.

44. Treat all living things with care and

respect. Do not touch any organism in the

classroom or laboratory unless given permission

to do so.

45. Your teacher will instruct you as to how

to handle each species that may be

brought into the classroom.

46. Treat all microorganisms as if they were

harmful. Use antiseptic procedure, as

directed by your teacher, when working

with microbes. Dispose of microbes as

your teacher directs.

47. Clean your hands thoroughly after handling

animals or the cage containing

animals.

48. Wear gloves when handling small mammals.

Report animal bites or stings to

your teacher at once.

**End-of-Investigation Rules**

49. When an investigation is completed,

clean up your work area and return all

equipment to its proper place.

50. Wash your hands after every investigation.

51. Turn off all burners before leaving the

laboratory. Check that the gas line leading

to the burner is off as well.

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