

**Lab Guidelines and Practices — Excel Educational Services, Inc.**  
(Print all pages, read, sign {parent & learner} and return only page 5 to EESI)

## **Purpose**

Science is a hands-on laboratory class. You will be doing many laboratory activities which require the use of hazardous chemicals. Safety in the science classroom is the #1 priority for all. To ensure a safe science classroom, a list of rules has been developed and provided to you in this student safety contract. These rules must be followed at all times. A copy of the contract is provided. **This contract must be signed by both you and a parent or guardian before you can participate in the laboratory.**

## **A copy of the rules is to be kept in your science notebook as a constant reminder of the safety rules.**

Proper laboratory technique is essential to the education of successful scientist. Your success will depend on your attitude and conduct. If you work with an attitude of rushing through, you will profit but little. An interest in your work, an understanding of its purpose and a clear interpretation of your results are necessary factors for a good laboratory course. The laboratory is a safe place to experiment if you are careful. You must assume responsibility of the safety of yourself and your neighbors. Following are some safety and procedural rules to help guide you in protecting yourself and others from injury in the laboratory.

### **1) Lab Partners**

Each student will be paired with 1 or 2 other learners. These lab partners will be responsible as a team for the lab supplies needed each week. It works best for students to discuss with their partners who will bring in what supply for the next lab. If time doesn't permit in class to coordinate supplies for the next week, you are responsible to call your lab partner to make sure all the supplies will be brought in.

*NOTE: Working with lab partners will help to minimize expenses each week. Most of the needed supplies are common household items. There will be times when it will be necessary to purchase an item or two for a lab if no one has the material available.*

### **2) Utensil Safety**

It's best not to mix lab supplies with items from the kitchen. For example spoons, glasses, bowls, etc. should not be taken from your home kitchen, used in experiments, and then returned back to the kitchen. We will sometimes use substances like toilet bowl cleaner, Drano, etc that could remain as residues on utensils, etc.

### **3) Lab Supply List**

A lab supply list on our web site covers all the materials needed for the entire semester. Please print two copies and put it in an easily accessible location for weekly reference (including a copy in your child's lab notebook).

### **4) Dealing with an Absence from Class**

If for any reason you or your lab partner will be absent from a future class...you **must** let your lab partners know in ADVANCE ... so they can coordinate the lab supplies. In addition, Dr Dan will need to know if anyone will be absent. The first section of class is the quiz over the prior week's material. If someone will be absent and Dr Dan does not know about it, the whole class will wait needlessly for everyone to arrive for the quiz.

5) No horsing around will be permitted, for the safety of everyone present!

6) **Safety glasses (goggles) are mandatory during lab time when dealing with chemicals, glass, heat etc!**

7) Listening to and following directions are expected.

8) Each learner should bring their own safety glasses, a lab notebook, and a great attitude to every lab!

We will have a lot of fun in the class... but we want to keep safety first!!

### **General Guidelines**

1. Conduct yourself in a responsible manner at all times in the laboratory.
2. Be familiar with your lab assignment before you begin the lab. Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask the educator before proceeding.
3. Never work alone. No student may work in the laboratory without an instructor present.
4. When first entering a science room, 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 during the laboratory time. Do not use laboratory glassware as containers for food or beverages.
6. Perform only those experiments authorized by the instructor. Never do anything in the laboratory that is not called for in the laboratory procedures or by your instructor. Carefully follow all instructions, both written and oral. Unauthorized experiments are prohibited.
7. Safety goggles (and aprons if you have one) must be worn whenever you work in lab. Gloves should be worn whenever you use chemicals that cause skin irritations or need to handle hot equipment. Wear older clothes that cover the maximum amount of skin.
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 away from the experiment area.
9. Know the locations and operating procedures of all available safety equipment including the first aid kit, eyewash station, safety shower, spill kit, fire extinguisher, and fire blanket. Know where the fire alarm and the exits are located.
10. Be alert and proceed with caution at all times in the laboratory. Notify the instructor immediately of any unsafe conditions you observe.
11. 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 instructor. 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. Cracked or broken glass should be disposed of very carefully and taken out to a dumpster (if available) right after class.
12. Labels and equipment instructions must be read carefully before use. Set up and use the prescribed apparatus as directed in the laboratory instructions provided by your teacher.
13. Keep hands away from your face, eyes, mouth, and body while using chemicals. Wash your hands with soap and water after performing all experiments. Clean, rinse, and dry all work surfaces and equipment at the end of the experiment.

14. Experiments must be personally monitored at all times. You will be assigned a laboratory area at which to work. Do not wander around the room, distract other students, interfere with or touch the laboratory experiments of others.

15. Students are never permitted to rummage through science storage bins or touch/disturb demonstration areas unless given specific permission by their educator.

16. Know what to do if there is a fire drill during a laboratory period; containers must be closed, and any electrical equipment turned off.

17. If you spill acid or any other corrosive chemical on you skin or clothes immediately wash area with large amounts of water (remember that small amounts of water may be worse than no water at all). After this get the teacher's attention.

18. At the end of the laboratory session see that: a) desk top, floor area, and sink are clean, and b) all equipment is cool, clean, and arranged.

### **Clothing**

19. Any time chemicals, heat, or glassware are used, students will wear laboratory goggles. **There will be no exceptions to this rule!** Contact lenses should not be worn in the laboratory unless you have permission from your instructor.

20. Dress properly during a laboratory activity. Long hair, dangling jewelry, and loose or baggy clothing are a hazard in the laboratory. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Shoes must completely cover the foot. No sandals are allowed.

### **Accidents and Injuries**

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

22. If you or your lab partner are hurt, immediately call out to your educator, "**Dr. Dan, PLEASE come quickly**" to get his attention. **This is only done for a true emergency.** Everyone should stand back if needed and/or prepare to help and get help if needed.

23. If a chemical should splash in your eye(s), immediately flush with running water for at least 20 minutes. Notify the instructor immediately.

### **Handling Chemicals**

24. All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemical unless specifically instructed to do so. The proper technique for smelling chemical fumes (when instructed to do so by the teacher) is to gently fan the air above the chemical toward your face. Breathe normally.

25. Check the label on chemical bottles twice before removing any of the contents. Take only as much chemical as you need. Smaller amounts often work better than larger amounts. Label all containers and massing papers holding dry chemicals.

26. Never return unused chemicals to their original containers.

27. Never use mouth suction to fill a pipette. Use a pipette bulb or pipette filler.

28. Acids must be handled with extreme care. ALWAYS ADD ACID SLOWLY TO WATER, with slow stirring and swirling, being careful of the heat produced, particularly with sulfuric acid.

29. Handle flammable hazardous liquids over a pan to contain spills. Never dispense flammable liquids anywhere near an open flame or source of heat.

30. Never take chemicals or other materials from the laboratory area.

31. Take great care when transferring acids and other chemicals from one part of the laboratory to another. Hold them securely and in the method demonstrated by the teacher as you walk.

### **Handling Glassware and Equipment**

32. 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. Always protect your hands with towels or cotton gloves when inserting glass tubing into, or removing it from, a rubber stopper. If a piece of glassware becomes "frozen" in a stopper, take it to your instructor for removal.

33. 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.

34. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware. **Do not immerse hot glassware in cold water; it may shatter.**

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

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

### **Heating Substances**

37. Never reach over an exposed flame. Consider all heating elements as "on" and hot.

38. 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.

39. 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.

40. Heated metals, glass, and ceramics remain very hot for a long time. They should be set aside to cool on a trivet and then picked up with caution. Use tongs or heat-protective gloves if necessary. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

Thanks to the Flinn Scientific Safety Rules for much of the above.

**Last Updated: Thursday, June 09, 2011**

**Agreement**

I **understand** and **agree to** the information in this handout and will do my best to have a safe, enjoyable, and educational time during lab!

I agree to hold harmless my Educator: Dr. Daniel G. Korow, of Excel Educational Services, Inc. and Excel Educational Services, Inc. for any event perceived as injurious to myself and/or any other person.

Name of Learner (*please print*) \_\_\_\_\_

Signature of Learner \_\_\_\_\_ Date \_\_\_\_\_

Name of Parent or Guardian (*please print*) \_\_\_\_\_

Signature of Parent or Guardian \_\_\_\_\_ Date \_\_\_\_\_

Signature of Educator \_\_\_\_\_ Date \_\_\_\_\_

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