# Science and Technology Education Laboratory Safety Contract

## Manheim Township School District

### PURPOSE

Science and technology education are hands-on classes. You may be doing activities, which require the use of chemicals, materials, and equipment that are hazardous and potentially dangerous. Safety in the laboratory is the #1 priority for students, teachers, and parents. To promote a safe 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. Two copies of the contract are provided. One copy must be signed by both you and a parent or guardian before you can participate in laboratory experiences. The second copy is yours to keep.

### GENERAL RULES

**1.** Conduct yourself in a responsible manner at all times. Never fool around in the laboratory. Horseplay, practical jokes, and pranks are prohibited. Do not wander around the room, distract other students, or interfere with the laboratory work of others.

**2.** Follow all written and verbal instructions carefully. If you do not understand a direction or part of a procedure, ask the instructor before proceeding.

**3.** No student may work in the laboratory without an instructor present in the room. Experiments must be personally monitored at all times.

**4.** When first entering a science or technology education room, do not touch any equipment, chemicals, or other materials 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, operations, and procedures authorized by the instructor. Never do anything in the laboratory that is not called for in the procedures or by your instructor.

**7.** Work areas should be kept clean and tidy at all times. Bring only your laboratory instructions, materials, worksheets, and/or reports to the work area. Other materials (books, purses, backpacks, etc.) should be stored in the designated area.

**8.** Keep aisles clear. Push your chair or stool under the desk/ table/ workbench when not in use.

**9.** 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 exits are located. Know what to do if there is a fire drill during a laboratory period.

**10.** 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.

**11.** Be alert and proceed with caution at all times in the laboratory. Notify the instructor immediately of any unsafe conditions you observe.

**12.** 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.

**13.** Labels and equipment instructions must be read carefully before use. Set up and use the prescribed apparatus as directed in the laboratory instructions or by your instructor.

**14.** Keep hands away from face, eyes, mouth and body while using chemicals, preserved specimens, and other hazardous materials. Wash your hands with soap and water after performing all laboratory activities. Clean all work surfaces and apparatus at the end of the activity. Return all tools and equipment clean and in working order to the proper storage area.

**15.** Students are never permitted in the storage rooms or preparation areas unless given specific permission by their instructor.

**16.** When using scissors, 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. Only use sharp instruments for their intended usage.

### CLOTHING

**17.** Any time chemicals, heat, glassware, or materials processing equipment are used, students must wear protective eyewear provided by the instructor.

**18.** Dress properly during laboratory activities. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Shoes must completely cover the foot. No open-toed shoes are permitted.

**19.** Lab aprons or lab coats have been provided for your use and should be worn during laboratory activities when instructed to do so.

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### ACCIDENTS AND INJURIES

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

**21.** If anything gets in your eye(s) or on your skin, immediately notify the instructor who will instruct you to use the eyewash station, shower, or report to the nurse.

### HANDLING CHEMICALS

**22.** All chemicals in the laboratory are to be considered dangerous. Do not touch, taste, or smell any chemicals unless specifically instructed to do so.

**23.** Check the label on chemical bottles twice before removing any. Take only as much as you need.

**24.** Never return unused chemicals to their original containers unless instructed to do so.

**25.** Never use mouth suction to fill a pipette. Use a rubber bulb or pipette pump.

**26.** When transferring reagents from one container to another, hold the containers away from your body.

**27.** Always add acid to water, swirl or stir the solution and be careful of the heat produced.

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

**29.** Never remove chemicals or other materials from the laboratory area.

**30.** When transporting chemicals from one part of the laboratory to another, hold them securely and walk.

### HANDLING GLASSWARE AND EQUIPMENT

**31.** 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 container.

**32.** Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.

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

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

### HEATING SUBSTANCES

**35**. Exercise extreme caution when using a gas burner or torch. 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 gas burners only as instructed by the teacher.

**36.** Never leave a lit burner or hot plate 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.

**37.** Do not point the open end of a test tube being heated at yourself or anyone else.

**38.** Heated metals, glass, and apparatus remain very hot for a long time. They should be set aside to cool in designated areas, and picked up with caution. Use tongs or heat-protective gloves if necessary.

**39**. Do not immerse hot glassware in cold water; it may shatter. Allow time for the glass to cool before further handling. Hot and cold glass has the same visual appearance. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

### ADDITIONAL RULES FOR CHEMISTRY CLASSES

**40.** Carry glass tubing, especially long pieces, in a vertical position to minimize the likelihood of breakage and injury.

**41.** 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.

**42.** Fill wash bottles only with distilled water and use only as intended, e.g., rinsing glassware and equipment, or adding water to a container.

### ADDITIONAL RULE FOR BIOLOGY CLASSES

**43.** Animals may be present in the classroom. Be aware of the benefits and potential consequences. Handle all living organisms in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.

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**LABORATORY SAFETY VIOLATION CONSEQUENCES**

Failure to abide by the science and technology education laboratory safety skills standards and rules may result in one or more of the following consequences:

- reminder to comply
- removal from current lab activity with possibly no opportunity to make up the lab or only partial credit at teacher discretion
- remedial lab safety training
- point deduction
- not permitted in future labs with alternative dry-lab activities provided
- detention
- reimbursement to the school for the replacement cost of equipment broken or materials wasted.

**AGREEMENT**

I, _____, (student's name) have read and agree to follow all of the safety rules set forth in this contract. I realize that I must obey these rules to ensure my own safety, and that of my fellow students and instructors. I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe lab environment. I will also closely follow the oral and written instructions provided by the instructor. I am aware that any violation of this safety contract that results in unsafe conduct in the laboratory or misbehavior on my part, may result in one or more of the consequences listed above. In addition I have provided information that will help to ensure my safety in the laboratory by answering the questions below.

**QUESTIONS**

Do you wear contact lenses? YES NO

Are you color blind? YES NO

Do you have allergies? YES NO

If so, list specific allergies_____

_____ _____

Student Signature Date

Dear Parent or Guardian:

We feel that you should be informed regarding the school's effort to create and maintain a safe science and technology education classroom/laboratory environment. With the cooperation of the instructors, parents, and students, a safety instruction program can eliminate, prevent, and correct possible hazards. You should be aware of the safety instructions your son/daughter will receive before engaging in any laboratory work. Please read the list of safety rules. No student will be permitted to perform laboratory activities unless this contract is signed by both the student and parent/guardian and is on file with the teacher. Your signature on this contract indicates that you have read this Laboratory Safety Contract, are aware of the measures taken to ensure the safety of your son/daughter in the laboratory, and will instruct your son/ daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

_____ _____

Parent/Guardian Signature Date