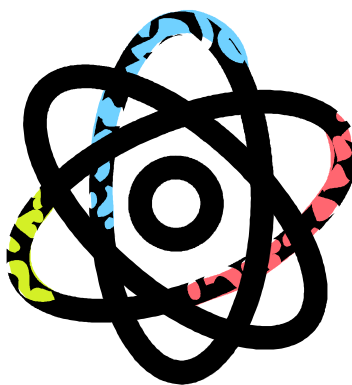


NGSS Safety Handbook

for California Public Schools
2014 Edition



California Department of Education
Sacramento, 2014

First Aid



Under normal circumstances, the school nurse will direct the activities necessary for treatments of illness, injury, or other health problems of students. However, at times the nurse may not be available for first aid on the school premises because of other responsibilities, including making home calls, transporting students, and engaging in health education duties. At those times, science teachers need to take appropriate action. Each science classroom should be equipped with appropriate first-aid and safety materials (see Appendix K).

A. General Information

Information in this section is adapted from multiple resources. It is not intended to supersede or make invalid any laws or rules established by local educational agencies or the State of California.

If a student becomes ill or is injured, instructors are expected to act in an informed and objective manner, with a minimum of emotional expression. Evaluate the problem, with special attention to the following symptoms:

- Difficulties in breathing—Start artificial respiration if breathing is absent; obtain a trained person to give cardiopulmonary resuscitation (CPR), if needed.
- The presence of bleeding—If necessary, control the bleeding in compliance with the school's bloodborne pathogens exposure control plan.
- The presence of shock—If necessary, initiate treatment. Section G of this chapter provides a discussion of shock resulting from injury.

Once assistance is given, it should be continued until the problem is resolved, or until the Emergency Medical Services personnel assume care for the victim, or until the patient is released to qualified medical help, the parent, or another responsible person. Measures should be taken to reduce any anxiety or fear that the injured student or other students may experience. A written

accident report should be given to the school-site administrator when any such incident occurs (see Appendix K).

Do's in First Aid

1. **Do** be cool, calm, and collected. Most cases are not serious.
2. **Do** obtain staff assistance if necessary.
3. **Do** handle the person as little as possible. Do not move the person until the illness or injury evaluation is complete.
4. **Do** call 9-1-1 if necessary.

On completion of the emergency-handling phase:

5. **Do** check with the victim and with any witnesses about what happened.
6. **Do** make a prompt, complete, and accurate report of the incident to the department chairperson and the administration.
7. **Do** pay attention to injuries that occurred on the way to and from school, as well as, those that occur at school.

Don'ts in First Aid

1. **Don't** give liquids (or medicines) to an unconscious person.
2. **Don't** try to arouse an unconscious person.
3. **Don't** cut the skin, break blisters, and so forth.
4. **Don't** diagnose.
5. **Don't** give medical advice.
6. **Don't** reduce dislocations.
7. **Don't** transport an injured student in a private car.
8. **Don't** send a student home before consulting a parent.
9. **Don't** treat injuries that happened at home.

B. Bites by Snakes, Spiders, Insects, and Mammals

Rattlesnakes are common in California and are the only native venomous snakes in the state. They are common in canyons, mountains, deserts, and new construction areas. Few adolescents or adults die from rattlesnake bites, although such bites inflicted on small children are considered especially serious. Bites by insects seldom result in death, but the ensuing pain and discomfort

may be minimized by early intervention. Dogs often come onto the school grounds and bite students; human bites occasionally occur in schools. Such bites often become infected, and victims should be referred to a physician for treatment and continued observation.

Venomous Snake Bites

1. The victim should be kept at absolute rest. Call 9-1-1. Treat for shock, as described in Section G of this chapter.
2. The major effort of the teacher should be to call 9-1-1 and quiet the victim.
3. Poison information centers recommend the following steps:
 - a. Keep the victim still. Call 9-1-1.
 - b. Place the injured extremity in a lowered position to retard the flow of the toxins to the victim's heart.
 - c. Cool the extremity with cold compresses, if possible, until Emergency Medical Services (EMS) personnel arrive, but do not pack the wound in ice.
 - d. Do not cut the wound area. A person injured at school can be transported quickly to a hospital where they can receive prompt, expert care by EMS personnel.
 - e. Do not use a tourniquet. Tourniquets can shut off the blood supply, resulting in worse damage to the limb and bite wound.

Spider Bites

1. Apply a cold application to the wound site.
2. Refer a student with black-widow spider bites to the nurse and the student's parents for medical attention. Generally, the bites are not considered to be medically urgent unless the school nurse alerts the teacher that the student has had an allergic reaction.

Bee Stings

1. Observe the person for an allergic reaction while carrying out steps two through five described below. Some of the signs to look for would be:
 - Breathing difficulties
 - Dry, hacking cough
 - Swelling and itching about the eyes
 - Sense of constriction in the throat or chest
 - Massive rash

- Sneezing and wheezing
- Sense of uneasiness

These symptoms usually occur within minutes, and victims experiencing such symptoms should be seen by a physician right away. Occasionally, the reactions are delayed.

2. Remove the stinger as soon as possible by scraping it with a fingernail or the blunt edge of a knife or a plastic card. To avoid releasing more venom, do not squeeze the end of the stinger by pulling it out.
3. Wash the area of the sting well with soap and water.
4. Place an ice pack on the sting. Do not put ice directly on the skin. Use an ice bag or wrap ice in a cloth.
5. Seek medical evaluation if the swelling becomes severe. Observe for infection, as bacteria are associated with any bite or sting.

Mammal Bites

There is danger of infection and rabies from the bites of all warm-blooded animals. Students should be advised not to approach strange dogs or other animals, especially a familiar pet that is acting peculiarly. Bats and skunks that are active in daytime must be considered rabid.

First-aid treatment consists of washing and flushing out the wounds thoroughly with strong soap and warm water or detergent solution as quickly as possible. Continue the washing for at least 10 minutes. Call 9-1-1. The value of the washing procedure is greatest when performed during the first hour or two. Refer the student to parents for medical follow-up. Catch the animal, if it is deemed safe to do so, and obtain information on the animal. Then call the local animal control agency.

Tick Bites and Lyme Disease

Lyme disease is an infectious disease caused by a bacterium known as a spirochete. The western blacklegged tick, *Ixodes pacificus*, transmits the bacteria that cause Lyme disease to humans in California, primarily in the northern part of the state. Lyme disease can start as a mild flu-like illness, developing eventually into severe chronic health problems. Lyme disease can be successfully treated with antibiotics, especially in the early stages. The potential for long-term complications increases if the disease progresses untreated. For this reason, any tick bite occurring during school-related activity should be monitored for the development of the following symptoms and the individual should be seen by a physician:

- Red, expanding rash called erythema migrans (EM)
- Fatigue, chills, fever, headache, muscle and joint aches, and swollen lymph nodes

(Source: [://www.cdc.gov/lyme/signs_symptoms/](http://www.cdc.gov/lyme/signs_symptoms/) accessed November 17, 2014)

C. Burns

Because heat sources and corrosive chemicals are used in many laboratory science activities, there is the potential for burns to occur. If someone is burned, the following procedures are appropriate.

Chemical Burns of the Skin (usually from strong acids or alkalies)

This kind of burn needs to be washed with large amounts of water. Use a shower or hose at **low** pressure (a forceful stream of water may further injure the burned skin) for at least 10 minutes. Remove clothing from the affected area while the skin is being flushed. Clothing should be cut off, not pulled off, to avoid spreading the chemical over skin, face, and eyes. The label of some chemical containers may suggest other helpful first-aid measures that may be used for the particular chemical. **Do not attempt to neutralize any chemical.** Never pour vinegar or citrus juice on alkali burns; never pour baking soda on acid burns. Attempts at neutralization may cause further chemical reaction and more damage. Apply a nonocclusive (i.e., loose) dressing and call 9-1-1.

Chemical Burns of the Eye

See Section D, “Eye Injuries.”

Nonchemical Burns of the Skin

The degree or extent of burns and the percentage of skin surface involved usually determine the first-aid measures to be used. In general, adults who have suffered burns over 10 percent of their body surface (or a child with 2–10 percent burns) require hospitalization. Burns on the face suggest possible injury to the respiratory tract and may obstruct breathing as facial swelling increases. **Call 9-1-1, as prompt medical attention is urgent.**

First-degree burns mean minor burns, such as those resulting from overexposure to the sun or from light contact with a hot object. The usual signs are redness or discoloration, together with mild swelling and pain. First aid includes applications of cool water or submersion of the burned area in cool water for no longer than 10 minutes to stop the burn. Follow with a dry dressing, if necessary.

Second-degree burns may result from a very deep sunburn, contact with hot liquids, or flash burns from flammable products. These burns are usually of greater depth than first-degree burns and have a red appearance. Blisters are usually present. First aid for second-degree burns entails (1) immersing the burned part in cool water (**not** in ice water) for a few minutes (water at room temperature or less is appropriate); (2) applying dry, sterile gauze or a clean cloth as a protective bandage; (3) taking precautions against breaking intact blisters or removing tissue; (4) avoiding the use of an antiseptic preparation, ointment, spray, or home remedy; (5) keeping affected arms or legs elevated; and (6) seeking medical evaluation.

Third-degree burns may be caused by a flame, ignited clothing, immersion in hot water, grease scalds, contact with hot objects, or electricity. The temperature and duration of contact are important in determining the extent of tissue destruction. These burns are usually characterized by deep tissue destruction; white, dark brown, mottled, or charred appearance (at first, the burn may resemble a second-degree burn); and complete destruction of all layers of the skin. First-aid procedures for third-degree burns are as follows:

1. Extinguish any smoldering clothing by applying water or by smothering with a fire blanket or any available clothing.
 - **Do not attempt to remove clothing.** Burnt clothing may be stuck or melted to the affected area.
 - Do not apply ointments, commercial preparations, grease, or other home remedies; those substances may cause further complications and interfere with treatment by the physician.
2. Do not attempt to administer any liquids or medicines orally to unconscious persons.
3. Cover the patient with a blanket.
4. If the hands are involved, keep them above the level of the heart.
5. Keep burned feet or legs elevated. (The victim should not be allowed to walk.)
6. Slightly elevate the head of a victim who has facial burns. Keep the person under continual observation for breathing difficulty. If respiratory problems develop, an open airway must be maintained.
7. Avoid immersing an extensively burned area or applying ice water over it; the cold may intensify the shock reaction. Cool water may be applied to the burned area to relieve pain and stop any further burning. Follow with the application of a dry, clean dressing or sheet.

8. Call 9-1-1 immediately and follow the serious injury or illness routine provided by the school district for emergency procedures.

Use of a Fire Blanket

If a student's clothing catches fire, the student should not run. He or she should stop, drop, and roll on the ground immediately while another student brings the fire blanket. Then the burn victim should wrap himself or herself in the blanket and roll on the ground to smother the flames. While the student is rolling in the blanket, the blanket should be held close to the neck to keep the flames away from the head and hair. Water, if available, may be appropriately used with the fire blanket to extinguish the flames.

Do **not** use a fire extinguisher on a person; serious chemical reactions or frostbite (with the use of a extinguisher) may result from such use.

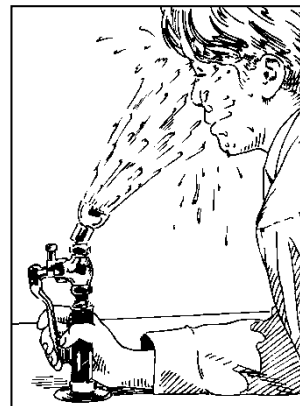
D. Eye Injuries

Immediate first-aid treatment for eye injuries may save the eyesight of an injured student. It is important to identify the source of chemical injuries to the eye.

Exposure to Chemicals—Acid Burns

Begin first aid for acid burns of the eye as quickly as possible.

1. Thoroughly wash the face, eyelid, and eye with tap water for at least 15 minutes, using the eyewash or eye/facewash station if possible (see Chapter 5, Section D, "Exposure to Corrosive or Irritating Substances"). If the victim is lying down, turn the head to the side; gently hold the eyelid open and, using the drench hose, apply water from the inner corner of the eye outward. Make sure that the chemical does not wash into the other eye.
2. Cover the eye with a dry, clean protective dressing (do *not* use cotton) and gently bandage in place.
3. Caution the victim against rubbing the eye.
4. Call 9-1-1.



Chemical Burns of the Eye—Alkali Burns

Alkali burns of the eye are progressive injuries. An eye that at first appears to have only slight surface injuries may develop deep inflammation and tissue destruction, and the patient may lose eyesight.

1. Flood the eye thoroughly with water for 15 minutes, using the eyewash or eyewash/facewash station. If the victim is lying down, turn the head to the side. Gently hold the eyelid open and, using the drench hose, apply water from the inner corner of the eye outward. Make sure the chemical does not wash into the other eye.
2. Cover the eye with a dry, clean protective dressing (do **not** use cotton) and gently bandage in place.
3. Caution the victim against rubbing the eye.
4. Call 9-1-1.



Other Chemicals in the Eye

1. Hold eyelids open; wash eyes immediately, using the eyewash or eyewash/facewash station, and continue to wash for at least 15 minutes. Make sure that the chemical does not wash into an unaffected eye.
2. Have someone call the California Poison Control System hotline at 1-800-222-1222 to speak to an expert who can ascertain the need for further medical treatment.
3. Call 9-1-1.

E. Exposure to Poisons

Proper storage and safety precautions, including correct labeling of all containers (see Chapter 7, Section F), are effective in preventing poisoning; instructors should follow those procedures. It is important to identify not only the poison but also the mode of entry. The danger of poisoning is present, and the teacher must be ready to act immediately.

The California Poison Control System has four answering sites or centers run by staff who can assist in evaluating the potential health risks from an exposure and the need for first aid and further medical management. The system can be accessed any time by calling 1-800-222-1222 from anywhere in California. (See Appendix H for a list of poison control centers.)

Be prepared to give staff at the poison control center the following information:

- Name of victim
- Age of victim
- Name of the poison involved
- Amount or degree of exposure
- Time of ingestion or exposure
- Condition of the victim
- Any first aid that has been performed

The poison control center staff will provide detailed instructions about additional steps to be taken.

If at any time the victim loses consciousness or develops difficulty in breathing, dial 9-1-1 to summon emergency medical personnel. CPR, including the use of an automated external defibrillator, should be performed, if needed.

Inhaled Poisons

1. If possible, carry the victim immediately (do not let him or her walk) to fresh air. Open all doors and windows if the victim is too heavy to carry.
2. Loosen clothing.
3. Use appropriate CPR if the victim is not breathing. Do not stop until the patient breathes or help arrives.
4. Have someone else dial 9-1-1 on the telephone for emergency medical assistance.
5. Monitor the victim for shock. (See Section G in this chapter.)

Ingested Poisons

1. Call the poison control center at 1-800-222-1222 (see Appendix H), give the staff the necessary information, and follow the staff's instructions.
2. Do **not** administer syrup of ipecac. Never induce vomiting in a stuporous or unconscious person.
3. Take the victim to a doctor or medical facility for further evaluation and treatment if instructed to do so. The package or container of the ingested poison, with the intact label(s), as well as any vomited material, should also be taken to the doctor. Avoid self-contamination.

Safety in the Elementary Science Classroom

Students in California are expected to engage in the process of science as soon as they begin their formal schooling. The *Science Framework for California Public Schools* (California Department of Education, 2004) describes investigative skills for students, beginning with the kindergarten level. The kindergartner may observe the appearance of vegetative structures that develop from seeds planted and maintained in the classroom, or the student may sort common objects according to a physical characteristic. A third-grader may study insect metamorphosis by observing the life cycle of mealworms. A fifth-grader may perform simple chemical reactions to observe differences between reactants and products.

The examples described above clearly indicate that the students and the teacher must do more than read about science. A robust elementary science program that includes hands-on investigations must be accompanied by an intentional and ongoing focus on safety. This “safety consciousness” most appropriately begins with the student’s earliest science experiences and ideally becomes refined and internalized as the student progresses through the grades.

In addition, be especially vigilant about modeling safe practices before each investigation and monitoring the students throughout the laboratory session. Younger students require repeated emphasis on issues of safety in order to instill in them safe habits that will support their confident participation in science activities.

A. Physical Space and Class Size

A classroom environment that supports the implementation of science activities in a safe manner is established only through the concerted effort of the teacher, students, school

administrators, and parents. Of primary concern is the physical space where the science activities will take place. The classroom must adequately accommodate the number of students for whom the space is designed. Overcrowding in the laboratory increases the risk of accidents and exposes the school district, the school administration, and staff to greater liability. According to research cited in a National Science Teachers Association position paper, accidents increase when class enrollments exceed 24 students or when not enough individual work space is provided.³

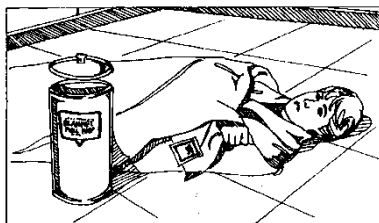
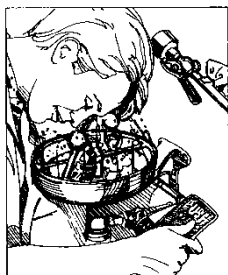
The CCR (Title 5, Subchapter 1, Section 14030) calls for school design to provide 1,300 square feet, including teacher-preparation areas as well as apparatus and chemical storage space.

B. Use of Safety Equipment

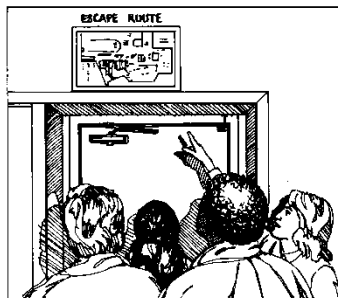
Once it is established that the physical space is appropriate, the next step is to become thoroughly knowledgeable about the location, proper use, and maintenance of safety equipment. Administrators can support teachers in the area of safety by providing safety training from persons or agencies with such expertise.

Know about:

- Adequate room ventilation
- The location and proper use of the cut-offs for the room's gas supply and electricity source
- The location and proper use of fire extinguishers
- Fire blankets
- Eyewash fountains or devices



³. From the "National Science Teachers Association Position Statement: Liability of Science Educators for Laboratory Safety," adopted by the NSTA Board of Directors, September 2007.



Clearly label or mark materials, storage space, and evacuation routes.

Teachers and students must be familiar with a posted safety plan, including an evacuation route. Keep a first-aid kit fully supplied and readily accessible at all times. Chemical hygiene plans based on standards from the California Occupational Safety and Health Administration (Cal/OSHA) should be implemented.

C. Making Safety a Habit

Safe practices are essential in any laboratory activity. The safe handling of equipment and materials should be reviewed as the instructor explains and models the procedure for a given activity. Responses that reflect students' understanding of safe practices should be solicited before the instructor proceeds with a lab activity. Effective strategies for fostering a responsible attitude regarding safety include the use of a student agreement to be signed by both student and parents and the display of student-generated posters on various aspects of safety in the science classroom.

In addition to learning the proper way to handle laboratory equipment and materials (both living and nonliving), students must learn how to manage their own personal safety. Instruct students about appropriate dress in a laboratory setting and the proper use of safety items such as goggles, gloves, and aprons.

Personal safety in the laboratory includes behavior. Horseplay is forbidden in the lab setting. Discipline must be maintained to preserve a safe environment and to help impress upon students the potential hazards of many substances and procedures.

D. General Safety Checklists

"General Laboratory Safety Precautions," specific safety precautions are discussed, although some may involve laboratory experiences outside the scope of the elementary curriculum. Appendix F is an excellent checklist for assessing the physical setup of the laboratory setting to determine readiness for instruction.

Another source of science safety checklists is the Council of State Science Supervisors (CSSS) Web site, [://www.csss-science.org/safety](http://www.csss-science.org/safety). (accessed November 17, 2014). The views and recommendations expressed by the CSSS concerning the law and/or legal liability are not necessarily those of the CDE, and the CDE makes no representation as to the validity,

accuracy, or applicability of such views and/or recommendations by mention of any CSSS publication herein. Notable safety recommendations for elementary teachers are to:

- Avoid the use of glass where possible, substituting appropriate plasticware instead.
- Avoid the use of mercury thermometers with elementary students.

Must-have items of note are:

- Appropriately sized indirectly ventilated chemical splash goggles
- Nonallergenic gloves
- Protective aprons
- Eyewash units
- Safety spray hoses/shower
- ABC tri-class fire extinguishers (A is for paper, wood, cloth, rubber, or plastic fires; B is for burning liquids, gases, or greases; and C is for burning electrical equipment)
- Fire blanket
- First-aid kit (as local and state policies permit)

Implement a goggle sanitation plan if multiple classes will share goggles.

E. Common Laboratory Operating Procedures

Another need expressed by elementary teachers, according to CSSS, is a description of common laboratory operating procedures. District, local, and state safety regulations should form the foundation for safe laboratory procedures. The CSSS safety document conveniently organizes common laboratory operating procedures into three categories: regulated safety rules, general safety rules, and classroom management.

Regulated safety rules are those district, local, and state statutes and regulations that apply to the operation of a safe laboratory. Science teachers should know and follow these rules as they use and store chemicals or provide for the care of an animal.

General safety rules are those related to the proper use of materials and equipment in the laboratory. Teachers and their students must wear laboratory attire and properly use appropriate equipment that is in good working order.

Classroom management speaks to teacher supervision of students and to an intentional emphasis on adherence to safety. Involve students immediately in becoming responsible for their personal safety through the use of safety agreements and assessments of the students' understanding and application of safety rules.

Parents should also indicate their understanding of laboratory expectations around safety when they sign the safety agreements. Examples of safety agreements and laboratory safety tests at the elementary level are in the Appendices, as well as at laboratory safety sites on the Web.

Routinely perform a trial run of a planned laboratory activity to determine potential hazards associated with the activity and then develop a plan to reduce or eliminate them. Then implement the activity according to the plan and monitor the students as they complete the activity in a safe manner. As part of the plan, students should:

- Wear appropriate clothing
- Use appropriate safety equipment (goggles, gloves, and protective aprons if necessary)
- Confine themselves to their assigned lab groups and lab areas (never in the teacher prep area)
- Follow the teacher's instructions

Student hand washing and a post-activity cleanup procedure should be a part of the overall lab plan.

F. Use of Chemicals

The use of chemicals in the elementary laboratory setting deserves some additional discussion. The CSSS recommends that the amount and types of chemicals used for instruction in the elementary science classroom be small in quantity and number. However, there are many instances when elementary students will work with chemicals. Therefore science teachers need to know about the physical properties, toxicity, proper storage, and handling of the chemicals being used.

As a part of the proper use of chemicals in the laboratory, a SDS must be maintained for each chemical used (locally purchased or purchased from a chemical supply house). The SDS is a form designed to support the safe use and handling of chemicals. It contains information about a chemical substance, such as physical data (melting point, boiling point, and so forth), toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and what to do in case of spillage or leakage.

The SDS normally is included in the shipment of a chemical, but it may also be accessed online free of charge at selected Web sites. The sites are described at <http://www.ilpi.com/MSDS/#Internet> (accessed November 17, 2014). Although there should be

no implication of endorsement or lack of endorsement by the CDE, a useful Web site for teachers is the Flinn Scientific site at [://www.flinnsci.com/msds-search.aspx](http://www.flinnsci.com/msds-search.aspx) (accessed November 17, 2014).

Do not use unfamiliar chemicals without reviewing the SDS first. Specimens and chemicals should be labeled and dated upon receipt of the shipment. Containers used by students or by the teacher in the preparation area should be labeled as to the contents.

Purchase and Management of Chemicals

The CSSS Web site offers some general guidelines for the purchase, labeling, storage, and disposal of chemicals of particular interest to elementary teachers. In addition to reviewing the SDS before purchasing a chemical, consider using generic chemicals commonly obtained from home, the grocery store, or the drugstore whenever possible. Below is a list of examples:

- Vinegar (acetic acid)
- Aluminum foil (aluminum metal)
- Vitamin C tablets (ascorbic acid)
- Ammonia (ammonium hydroxide, base)
- Chalk (calcium carbonate)
- Lime (calcium oxide, basic)
- Plaster of Paris (calcium sulfate)
- Rubbing alcohol (isopropyl alcohol)
- Talc (magnesium silicate)
- Baking soda (sodium bicarbonate)
- Table salt (sodium chloride)
- Table sugar (sucrose)
- Epsom salts (magnesium sulfate)
- Starch (corn starch)

Chemicals should be purchased in a quantity sufficient to be used within a defined period, ideally within the school year.

“Safety in the Chemistry Laboratory,” gives a comprehensive treatment of the considerations for managing chemicals in the laboratory. The CSSS adds the following recommendations for elementary teachers:

- When labeling chemicals, give the chemical name or trade name of the product on the label. Include the name of the chemical manufacturer or supplier along with the address and telephone number. Indicate the strength of the chemical, especially if it was prepared on site.
- It is recommended that elementary students not handle any chemical with a National Fire Protection Association (NFPA) rating in any category over 2, out of a 0–4 rating where 0 represents no hazard and 4 represents the highest hazard level.
- Chemicals should be stored in a separate, locked area away from the classroom, if possible. A NFPA warning symbol should be placed on the front of the cabinet showing the highest hazard rating in each category of any chemical stored in the cabinet.
- Maintain a complete inventory of every chemical in storage. Keep copies of the inventory and all SDS in the storage area and in the principal's office. The chemical inventory should be reviewed and revised annually.
- Follow accepted guidelines to separate and store chemicals properly.
- Use information contained in the SDS and in local and state mandates to dispose of chemicals properly.

G. Animals in the Classroom

Animals are often used in elementary science instruction. However, the teacher should check school, district, and state policies regarding live organisms in the classroom. Section B in Chapter 5, “Additional Safety Practices,” notes that there is a trend away from maintaining live animals in the classroom due to concern for preserving their optimal health. However, if a science teacher wants to keep animals in the classroom, some considerations must be addressed. The list below includes recommendations of the CSSS about animals in the classroom.

- Cages must be of the appropriate size and constructed of the proper material. Cages should be cleaned daily and kept locked in safe, comfortable settings.
- Animals should be handled minimally and gently by handlers wearing non-allergenic gloves and only after proper directions and demonstrations have been given. Students should never be allowed to stick their fingers into animal cages, throw things into the cages, tease the animals, or disturb any animal that is sleeping or eating.
- Students should be discouraged from bringing personal pets to school. Do not allow dead animals in the room, as the exact cause of death may not be known.

- Have a plan for the removal, care, and return of animals during holidays and at the end of the school year.
- Animals used most often in the elementary classroom should be invertebrates. Vertebrate studies should be restricted to observations of normal functions such as growth, feeding, or life cycles.
- For most elementary students, the CSSS does not recommend student-performed dissections. If upper-elementary students do perform dissections, it is recommended that they use preserved, lower-order animals such as worms, insects, or crustaceans.
- Beware of allergic reactions that may result from the study of insects.
- Owl pellets used in the classroom should have been previously sanitized, and a check for student allergies to fur and feathers should be done.

Note: As of August 5, 2009, there is a Cal/OSHA requirement for employers that have employees who may be exposed to zoonotic aerosol transmissible diseases. Such employers should check with local health officers of the California Department of Food and Agriculture (CDFA) for alerts regarding the presence of zoonotic diseases and the steps that should be taken to prevent school staff from contracting the diseases. The details of the requirements are in the CCR, Title 8, General Industry Safety Orders, Section 5199.1, Aerosol Transmissible Diseases, Zoonotic.

H. Plants in the Classroom

Compared with animals, plants are somewhat easier to care for, especially over brief periods when school is not in session. However, there are still some precautions teachers need to take when managing plants in the classroom. (See Section F, “Poisonous Plants,” in Chapter 5.) A primary precaution is never to place any part of an unknown plant in the mouth. Teachers should point out toxic or poisonous plants to their students to prevent or reduce the students’ exposure to the plant’s toxins. Rubbing plant sap or juice from a plant’s fruit onto the skin should be avoided, as well as inhaling smoke from a burning plant or burning leaves. Students should not touch mushrooms, as many varieties are poisonous.

Students should be discouraged from picking wildflowers or unknown plants.

Elementary laboratory activities with plants often involve studies of seed sprouting (germination). The CSSS recommends that, for experiments, teachers purchase seeds from a grocery store, not seeds marketed for garden or field planting, as those seeds may be coated

with chemicals that are poisonous or that are irritating to the skin. Remember the following tips, as recommended by CSSS, when working with plants:

- Wash hands thoroughly or wear non-allergenic gloves when working with plants. Avoid using plants that have thorns.
- Use sterilized potting soil instead of soil removed from the outside, as the latter likely contains mold and other fungi. For outdoor soil studies, students should use proper digging tools.
- Take care if studying aquatic plants from ponds or marshes, as pond or marsh water may contain substances that can cause illness.
- Wash hands thoroughly after the plant activities, and wash all surfaces where the plants were handled.

I. Field Trips at the Elementary Level

All students, and especially elementary-age students, benefit from the observations and hands-on activities that are possible on field trips and other field experiences. The keys to successful field trips are careful planning and supervision. There should be thorough planning of safe field trips as well as precautions that may be especially applicable in California.

Additional CSSS recommendations are as follows:

- Have students and parents sign a safety agreement outlining rules and expected behavior.
- Arrange for the use of school-approved vehicles and drivers if transportation is required.
- Carry a mobile phone in case of emergencies.
- For water-related field experiences, ensure that at least one adult is trained in water safety techniques, including cardiopulmonary resuscitation (CPR) and life saving.
- Obtain the most current weather forecast prior to the activity in order to plan for potential hazardous weather conditions and to better inform students of appropriate clothing.
- Group students in pairs or teams under the supervision of an adult chaperone.
- Monitor student activities continually.
- Reinforce the learning objectives for the field experience and keep students focused on the activity's purpose and any assigned tasks.

Safety Regulations for Science Students

While working in the science laboratory, students will have important responsibilities that do not apply to other classrooms. Students will be working with materials and apparatus that, if handled carelessly or improperly, have the potential to cause injury or discomfort.

A science laboratory can be a safe place in which to work if the student is foresighted, alert, and cautious. The following practices will be followed:

1. Report any accident to the teacher immediately, no matter how minor, including any burns, scratches, cuts, or contact with corrosive liquid (on skin or clothing).
2. Prepare for each laboratory activity by reading all instructions before coming to class. Follow all directions implicitly and intelligently. Make note of any modification in procedure given by the teacher.
3. Any science project or individually planned experiment must be approved by the teacher.
4. Use only those materials and equipment authorized by the teacher.
5. Inform the teacher immediately of any equipment that does not work properly.
6. Clean up any nonhazardous spill on the floor or work space immediately.
7. Wear appropriate eye protection, as directed by the teacher, whenever working in the laboratory or in field experiments such as rocket launches. Safety goggles must be worn during hazardous activities involving caustic/corrosive chemicals, heating of liquids, and other activities that may injure the eyes.
8. Splashes and fumes from hazardous chemicals present a special danger to people who wear contact lenses. Therefore, it is preferable for students to wear regular glasses (inside splash-proof goggles, when appropriate) rather than contact lenses during all class activities or purchase personal splash-proof goggles and wear them whenever exposure to chemicals or chemical fumes is possible.

9. Students with open skin wounds on hands must wear gloves or be excused from the laboratory activity.
10. Never carry hot equipment or dangerous chemicals through a group of students.
11. Check labels and equipment instructions carefully. Be sure correct items are used in the proper manner.
12. Be aware of any hazardous chemicals being used. Know the location of the SDS and be familiar with what the sheets indicate for the hazardous chemicals being used.
13. Never taste anything or touch chemicals with the hands, unless specifically instructed to do so.
14. Test for odor of chemicals only by waving a hand above the container and sniffing cautiously from a distance.
15. Eating or drinking in the laboratory or from laboratory equipment is not permitted.
16. Use a mechanical pipette filler (never the mouth) when measuring or transferring small quantities of liquid with a pipette.
17. When heating material in a test tube, do not look into the tube or point it in the direction of any person during the process.
18. Never pour reagents back into bottles, exchange stoppers of bottles, or lay stoppers on the table.
19. When diluting acids, always pour **acids into water**, never the reverse. Combine the liquids slowly while stirring to distribute heat buildup throughout the mixture.
20. Keep hands away from face, eyes, and clothes while using solutions, specimens, equipment, or materials in the laboratory. Wash hands as necessary and wash thoroughly at the conclusion of the laboratory period.
21. To treat a burn from an acid or alkali, wash the affected area immediately with plenty of running water. If the eye is involved, irrigate it at the eyewash station without interruption for 15 minutes. Report the incident to the teacher immediately.
22. Know the location of the emergency shower, eyewash and facewash station, fire blanket, fire extinguisher, fire alarm box, and exits.
23. Know the proper fire- and earthquake-drill procedures.

24. Roll long sleeves above the wrist. Long, hanging necklaces, bulky jewelry, and excessive or bulky clothing should not be worn in the laboratory.
25. Confine long hair during a laboratory activity.
26. Do not wear sandals in the laboratory; always wear closed-toe shoes.
27. Keep work areas clean. Floors and aisles should be kept clear of equipment and materials.
28. Light gas burners only as instructed by the teacher. Be sure no volatile materials (such as alcohol or acetone) are being used nearby.
29. Use a burner with extreme caution. Keep head and clothing away from the flame and turn it off when not in use.
30. Use a fire blanket (stop, drop, and roll) to extinguish any flame on a person.
31. Dispose of laboratory waste as instructed by the teacher. Use separate, designated containers (not the wastebasket) for the following:
 - Matches, litmus paper, wooden splints, toothpicks, and so on
 - Broken and waste glass
 - Rags, paper towels, or other absorbent materials used in the cleanup of flammable solids or liquids
 - Hazardous/toxic liquids and solids
32. Place books, purses, and other personal items in the designated storage area. Take only laboratory manuals and notebooks into the working area.
33. Students are not permitted in laboratory storage rooms or teachers' workrooms without the approval of the teacher.
34. To cut small-diameter glass tubing, use a file or tubing cutter to make a deep scratch. Wrap the tubing in a paper towel before breaking the glass by pushing the glass with the thumbs in an outward direction. Fire-polish all ends.
35. When bending glass, allow time for the glass to cool before further handling. Hot and cold glass have the same appearance. Determine whether an object is hot by bringing the back of the hand close to the object.
36. Match hole sizes and tubing when inserting glass tubing into a stopper. If necessary, expand the hole first by using an appropriately sized cork borer. Lubricate the stopper

hole and glass tubing with water or glycerin to ease insertion, using towels to protect the hand. Carefully twist (never push) glass tubing into stopper holes.

37. Remove all broken glass from the work area or floor as soon as possible. Never handle broken glass with bare hands; use a counter brush and dustpan.
38. Report broken glassware, including thermometers, to the teacher immediately.
39. Operate electrical equipment only in a dry area and with dry hands.
40. When removing an electrical plug from its socket, pull the plug, not the electrical cord.
41. Always approach laboratory experiences in a serious and courteous manner.
42. Always clean the laboratory area before leaving.
43. Students (and teacher) should wash hands with soap and water before leaving the laboratory area.

Note: Persistent or willful violation of the regulations will result in the loss of laboratory privileges and possible dismissal from the class.

Student Science Safety Agreement

School: _____

Teacher: _____

Date: _____

Student's name: _____

The student has received specific instruction regarding the use, function, and location of the following:

- | | |
|--|--------------------------|
| Aprons/ gloves | <input type="checkbox"/> |
| Chemical-spill kit | <input type="checkbox"/> |
| Eye-protective devices (ie:goggles, face shield, safety shield) | <input type="checkbox"/> |
| Eyewash, drench spray, or drench shower | <input type="checkbox"/> |
| Fire extinguisher | <input type="checkbox"/> |
| Fire blanket | <input type="checkbox"/> |
| First-aid kit | <input type="checkbox"/> |
| Heat sources (burners, hot plate, microwave) and techniques in their use | <input type="checkbox"/> |
| Standardized Safety Data Sheets (SDS) | <input type="checkbox"/> |
| Waste-disposal containers for glass, chemicals, matches, paper, wood | <input type="checkbox"/> |

The student will abide by the "Safety Regulations for Science Students" to prevent accidents and injury to herself or himself and others and will:

- follow all additional instructions given by the teacher;
- conduct herself or himself in a responsible manner at all times in the laboratory.

List below any special allergies or sensitivities (e.g., to plants, animals, pollen, foods, chemicals, bee stings) that may affect the student's safety in the laboratory or on field trips. Attach to this sheet a list of emergency medications and procedures to be used in case the student is exposed.

Check this box if the student wears contact lenses: ☐

Student's Statement

I have in my possession and have read the "Safety Regulations for Science Students" and agree to abide by them at all times while in the laboratory. I have received specific safety instruction as indicated above.

Signature of student:_____

Date:_____

Parent's or Guardian's Statement

I have read this agreement and the "Safety Regulations for Science Students" and give my consent for the student who has signed the preceding statement to engage in laboratory activities using a variety of science equipment and materials, including those described. I pledge my cooperation in urging that she or he observe the safety regulations prescribed.

Signature of parent or guardian:_____

Date:_____

Return the completed and signed form to_____

by _____.

(date)

Student Science Safety Agreement

Lower Elementary School

School: _____

Teacher: _____

Date: _____

Student's name: _____

The student has received specific instruction regarding the use, function, and location of the following:

- | | |
|--|--------------------------|
| Aprons, gloves | <input type="checkbox"/> |
| Chemical-spill kit | <input type="checkbox"/> |
| Eye-protective devices (goggles, face shield, safety shield) | <input type="checkbox"/> |
| Eyewash fountain, drench spray, and drench shower | <input type="checkbox"/> |
| Fire extinguisher | <input type="checkbox"/> |
| Fire blanket | <input type="checkbox"/> |
| First-aid kit | <input type="checkbox"/> |
| Waste-disposal containers for glass, chemicals, matches, paper, and wood | <input type="checkbox"/> |

Learn the rules listed below and follow them at all times during science activities.

1. Listen carefully and follow ALL directions given by the teacher.
2. Practice good behavior at all times during science activities.
3. Ask questions if unsure of what to do.
4. Never touch, taste, or smell any material unless directed by the teacher.
5. Long hair is to be tied back. Take off any jewelry and adjust loose clothing in order to maintain safe working conditions.
6. Use proper safety eyewear and protective aprons or smocks when necessary.
7. Clear all work areas of extra books, papers, notebooks, and the like before beginning science activities. Always leave the work area clean and dispose of trash as directed by the teacher.
8. Always wash hands thoroughly after each science activity.
9. Tell the teacher about any accident, no matter what happens.
10. Do not carry out science activities at home without adult supervision.

List below any special allergies or sensitivities (e.g., to plants, animals, pollen, foods, chemicals, bee stings) that may affect the student's safety in the laboratory or on field trips. Attach to this sheet a list of emergency medications and procedures to be used in case the student is exposed.

Check this box if the student wears contact lenses: ☐

Teacher's Statement

I have explained this Science Safety Agreement to the class in detail. Please review this agreement with your child.

Signature of teacher: _____

Date: _____

Parent's or Guardian's Statement

I have read this agreement and the "Safety Regulations for Science Students" and give my consent for my child to engage in laboratory activities using a variety of science equipment and materials, including those described. I pledge my cooperation in urging that she or he observe the safety regulations prescribed.

Signature of parent or guardian: _____

Date: _____

Return the completed and signed form to _____
by _____.

(date)

Student Science Safety Agreement

Upper Elementary School

School: _____

Teacher: _____

Date: _____

Student's name: _____

The student has received specific instruction regarding the use, function, and location of the following:

- | | |
|--|--------------------------|
| Aprons, gloves | <input type="checkbox"/> |
| Chemical-spill kit | <input type="checkbox"/> |
| Eye-protective devices (goggles, face shield, safety shield) | <input type="checkbox"/> |
| Eyewash fountain, drench spray, and drench shower | <input type="checkbox"/> |
| Fire extinguisher | <input type="checkbox"/> |
| Fire blanket | <input type="checkbox"/> |
| First-aid kit | <input type="checkbox"/> |
| Heat sources (burners, hot plate, microwave) and techniques in their use | <input type="checkbox"/> |
| Standardized Safety Data Sheets (SDS) | <input type="checkbox"/> |
| Waste-disposal containers for glass, chemicals, matches, paper, and wood | <input type="checkbox"/> |

Learn the rules listed below and follow them at all times during science activities.

1. Listen carefully and follow ALL directions given by the teacher.
2. Practice good behavior at all times during science activities.
3. Ask questions if unsure of what to do.
4. Never touch, taste, or smell any material unless directed by the teacher.
5. Long hair is to be tied back. Take off any jewelry and adjust loose clothing in order to maintain safe working conditions.
6. Use proper safety eyewear and protective aprons or smocks when necessary.
7. Clear all work areas of extra books, papers, notebooks, and the like before beginning science activities. Always leave the work area clean and dispose of trash as directed by the teacher.

8. Always wash hands thoroughly after each and every science activity.
9. Tell the teacher about any accident, no matter what happens.
10. Do not carry out science activities at home without adult supervision.

List below any special allergies or sensitivities (e.g., to plants, animals, pollen, foods, chemicals, bee stings) that may affect the student's safety in the laboratory or on field trips. Attach to this sheet a list of emergency medications and procedures to be used in case the student is exposed.

Check this box if the student wears contact lenses: ☐

Student's Statement

I, _____, understand and agree to follow the safety rules and conduct guidelines described above. I agree to follow any other guidelines or instructions provided by my teacher.

Signature of student: _____

Date: _____

Parent's or Guardian's Statement

I have read this agreement and the "Safety Regulations for Science Students" and give my consent for the student who has signed the preceding statement to engage in laboratory activities using a variety of science equipment and materials, including those described. I pledge my cooperation in urging that she or he observe the safety regulations prescribed.

Signature of parent or guardian: _____

Date: _____

Return the completed and signed form to _____

by _____.

(date)

Sample Science Laboratory Safety Test

The following are suggested questions from which teachers might prepare tests for specific courses. The list of questions is not intended to be comprehensive; each teacher is expected to supplement the sample items.

1. If you see something in the classroom or laboratory that is dangerous, tell the teacher
 - a. When you have time
 - b. Immediately
 - c. After class
 - d. After school
2. Rags or paper towels with flammable liquids or solids on or in them must be put in
 - a. A cardboard box
 - b. A metal or crockery container with a lid
 - c. A wastebasket
 - d. A trash can
3. Any spill on the floor can cause an accident. Always clean it up
 - a. Immediately
 - b. During cleanup time
 - c. When you have time
 - d. At the end of the period
4. Alcohol, acetone, and other volatile materials that can burn easily should never be used near
 - a. Another person
 - b. An open flame
 - c. A laboratory counter
 - d. A work table
5. When you work with laboratory chemicals and Bunsen burners, long hair must be
 - a. Cut off
 - b. Held with both hands
 - c. Kept out of the way by wearing a band, hat, or hairnet
 - d. Combed nicely
6. When you work with laboratory chemicals, equipment, or burners, you must wear
 - a. Loose clothes
 - b. Goggles
 - c. Contact lenses
 - d. Loose jewelry

7. If you are hurt (cut, burned, and so on), tell the
- a. Nurse at once
 - b. Teacher at once
 - c. Class at once
 - d. Doctor after school
8. Whenever you are in the classroom or laboratory, you should wear
- a. Sandals
 - b. Closed shoes
 - c. Open-toe shoes
 - d. No shoes
9. If you think there is something wrong with a piece of equipment you are using, stop, turn it off, and tell
- a. The class leader
 - b. The teacher
 - c. Another student
 - d. The custodian
10. If you break a piece of glassware or other equipment, tell the teacher
- a. The next period
 - b. At cleanup time
 - c. Immediately
 - d. Never
11. All floors, aisles, and passageways should be kept clear of
- a. Teacher and students
 - b. Laboratory equipment and chemicals
 - c. Laboratory equipment only
 - d. Chemicals only
12. If you see a fire in an apparatus assembly or a burning liquid, such as alcohol, it is best to put it out with
- a. The fire blanket
 - b. Water from the sink
 - c. Your coat
 - d. The ABC fire extinguisher
13. To put out a fire in a person's clothing, use
- a. The fire blanket
 - b. A handy chemical
 - c. The wind from running
 - d. The fire extinguisher
14. The correct way to move about the classroom or laboratory is to
- a. Run
 - b. Walk
 - c. Hurry
 - d. Skip

15. Helping to clean up the classroom or laboratory is the job of
- a. New students
 - b. Old students
 - c. Each student
 - d. The teacher
16. When you use laboratory equipment or chemicals, you should give the procedure all of your
- a. Interest
 - b. Attention
 - c. Effort
 - d. All of these (a, b, and c)
17. Chemicals, small parts, glassware, and stirring rods are not to be
- a. Used in the laboratory
 - b. Put in your mouth
 - c. Put on the bench
 - d. Taken from boxes
18. To prevent accidents during laboratory activities with chemicals and equipment, you should
- a. Use shortcuts
 - b. Follow your teacher's directions
 - c. Hurry ahead of teachers
 - d. Ask someone else to do the work
19. Playing (rather than working) in the laboratory or bothering another person is
- a. Always against the rules
 - b. All right
 - c. Not dangerous
 - d. All right if you are working
20. To be able to put out a fire quickly and safely, you should know
- a. How to use extinguishers
 - b. Where the extinguishers are located
 - c. Which extinguisher is used for each class of fire
 - d. All of the above
21. If flammable liquids such as alcohol are spilled, you should first
- a. Let them dry up
 - b. Use a fire extinguisher
 - c. Tell the teacher
 - d. Pour water on them
22. Before you touch an electrical switch, plug, or outlet
- a. Your hands must be dry
 - b. Ask the custodian
 - c. Your hands must be clean
 - d. Ask the nurse
23. Eyeglasses do not provide as much protection as
- a. A face shield
 - b. Safety glasses
 - c. Splash-proof goggles
 - d. Any of these (a, b, or c)

24. Laboratory aprons, when provided, are for
- The protection of you and your clothes
 - Wiping your hands
 - Others to hang up
 - When you are wearing your best clothes
25. Cabinet drawers and doors that are left open cause a hazard and should be
- Walked around
 - Left alone
 - Closed by you
 - Closed by the teacher only
26. If there is a fire in the laboratory, notify the teacher at once and prepare to
- Evacuate the building or laboratory
 - Remove flammable materials
 - Open the windows
 - Rapidly clean the laboratory
27. All chemicals should be stored in
- Tin cans
 - Clear glass bottles
 - Dark brown bottles
 - Properly labeled containers
28. When preparing dilute solutions of an acid, carefully pour
- The acid into water
 - Water into the acid
 - The acid into the container
 - Both liquids at once
29. If acid gets on your skin or clothes, wash at once with
- Sulfuric acid
 - Water
 - Soap
 - Oil
30. Small quantities of spilled acids can be made safe with
- Gasoline
 - Water
 - Alcohol
 - Sodium bicarbonate solution
31. Small amounts of spilled bases can be neutralized and made safe with
- Gasoline
 - Water
 - Alcohol
 - Dilute acetic acid solution (vinegar)

32. You must wear approved eye protection while working in the laboratory
- a. To improve your vision
 - b. Sometimes
 - c. To avoid myopia
 - d. Whenever the laboratory instructions tell you to
33. Disturbing other students while they are working in the laboratory is
- a. Helpful
 - b. Impolite
 - c. Dangerous
 - d. The quickest way to do a job
34. You should prepare for each laboratory activity by reading all instructions
- a. After school
 - b. While you are working
 - c. Before you start to work
 - d. Next week
35. When measuring small amounts of liquids with a pipette, draw the liquid into the tube by using
- a. Your mouth
 - b. Your thumb
 - c. A mechanical pipette filler
 - d. The palm of your hand
36. When heating substances in a test tube, be sure the open end of the tube points toward
- a. Yourself
 - b. No one
 - c. Your partner
 - d. A classmate
37. After heating glass tubing to bend it, the soonest you may safely handle the tubing is
- a. Within 30 seconds
 - b. After you are sure it is cool
 - c. After school
 - d. The next day
38. To insert glass tubing into a rubber stopper, you should (after fire-polishing and cooling)—
- a. Lubricate with water or glycerin
 - b. Use a towel for protection
 - c. Twist carefully
 - d. All of these (a, b, and c)
39. To remove an electrical plug from its socket, you should
- a. Pull the plug itself
 - b. Pull on the cord
 - c. Pull on the appliance
 - d. None of these (a, b, or c)

40. On the back of your answer sheet, draw a diagram of your science laboratory or classroom and label the locations of the following items:

Fire blanket

Fire extinguisher

Exits

Safety-goggles storage (or dispensing area)

Eyewash station

Safety shower

Closest fire alarm

Waste-disposal containers (label the type of waste for which each container is suitable)

Student Answer Sheet for Science Laboratory Safety Test

Name: _____

Period: _____ Test No.: _____ Score: _____

Directions: Read each statement on the safety test. Under each question there are four possible answers. Choose the one correct answer and fill in the box that represents the answer.

Example: Read question 1. The correct answer is “b.” Note that the “b” box beside number 1 (see example below) is darkened. Continue marking all the answers in this manner.

	a	b	c	d
1.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40.	Place answer on back of sheet.			

Answer Key

Items 1–39

Science Laboratory Safety Test

	a	b	c	d
1.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
22.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	a	b	c	d

24.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
32.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
33.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
34.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
35.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
36.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

40. (Diagram of lab with location of required items: fire blanket, fire extinguisher, exits, safety-goggles storage [or dispensing area], eyewash station, safety shower, closest fire alarm, waste-disposal containers [label type of waste for which each container is suitable])

Sample Accident Report

School: _____

Staff member completing report: _____ Room: _____

Date and time of incident: _____

Location of the incident: _____

Person(s) involved in the incident:

Staff

Student

Description of the incident:

Immediate action in responding to the emergency:

Action taken (or required) to prevent such incidents in the future:

Witnesses to the incident: _____

Date/time of report

Signature