



At-Home Science Safety General Guidelines Grades K-12



To provide and maintain a learning and working environment for students and teachers that is as safe as possible, it is recommended that science educators:

- exercise reasonable judgment when conducting laboratory investigations;
- minimize, if not eliminate, risk by using virtual laboratory simulations/investigations;
- plan lessons that incorporate low risk, safe hands-on activities that provide **all students** with equitable access to NGSS curriculum;
- accept the **duty of care** to provide all students and staff with the safest environment possible when performing hands-on science investigations or demonstrations in the classroom or at-home setting.

Inherent in laboratory-based activities is the potential for injury. As professionals, teachers of science have a **duty or standard of care** to ensure the safety of students, teachers, and staff. **Duty of care** is defined as an obligation, recognized by law, requiring conformance to a certain standard of conduct to protect others against unreasonable risk (Prosser et al.1984, NSTA 2014a). As such, science educators must act as a reasonably prudent person would in providing and maintaining a learning and working environment for their students and staff that is as safe as possible.

To ensure that science experiments at home are safe, positive learning experiences, teachers should encourage students and their parents to read, discuss, and sign the **student version** of the *At-Home Science Safety General Guidelines*. The student, parent, and science instructor should each keep a copy for their records.

1. Stress to students and parents to read and understand the lab procedure before beginning.
2. Thoroughly review written lab procedures in advance and understand what you are going to do as a demonstration or student-centered activity. Know any potential hazards before you begin. Stress to your students the importance of following all instructions you or the adult supervisor provide.
3. Stress to students they should only perform experiments you recommend.
4. Encourage students to be properly prepared to do the experiment. Provide students with an easily accessible list of necessary materials (including potential approved substitutes) and lab/activity directions. Encourage students to discuss any concerns they have with you prior to doing the experiment.
5. Be sure to communicate to your students any safety warnings as they relate to the experiment.
6. Communicate to students and parents that all experiments should be performed on surfaces that can be easily cleaned or wiped up. The family may need to consider a way to protect against any materials which could stain or damage countertops or furniture.



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7. When doing an experiment in distance learning instruction, it is advised that your students activate their video component to insure appropriate oversight/supervision.
8. In most cases, at-home experiments you assign will probably be considered extremely low-risk and NOT require protective eyewear. IF you require your students to participate in an experiment that requires protective eyewear (i.e. goggles), the school should provide them. As an alternative to this, you may demonstrate the experiment and/or videotape it for your students to observe.
9. Prior to doing any at-home experiments, review with your students their family's emergency evacuation plan and location of a first aid kit.
10. Act and model responsible online behavior at all times. Emphasize to students that no horseplay should occur in the experiment area.
11. Emphasize to students they should never taste, eat or drink any materials they work with in an experiment. Eating, drinking, and storing food in the work area during an experiment is not recommended.
12. Be sure your work area is free of clutter.
13. Heat sources (i.e. candles, matches, stove/oven) are not recommended for at-home science. However, some experiments may require use of hot/warm water from the tap--inform your students to be careful when using anything with extreme temperatures. If you or a student burn yourself, treat immediately by putting the burned area under cold water for at least 15 minutes.
14. Report all accidents and injuries to the appropriate school/district administrator immediately.
15. Be sure students inform you as to any allergies and/or medical problems they may have, prior to the start of any experimentation, by completing the bottom section of the **student version** of the *At-Home Science Safety General Guidelines*.
16. It is recommended that both you and your students wash your hands with soap and water for at least 20 seconds BEFORE and AFTER every experiment. Be sure to clean your work surfaces with an appropriate disinfectant frequently.
17. If you provide students with an at-home science kit, emphasize to parents it should be stored so that small children or pets can't reach them.
18. Frequently remind students if they have any questions or confusion around an experiment or lab procedure(s), they should NOT proceed until they seek clarification from you.
19. Remind students to be extremely careful when navigating the internet. It is recommended they only open links that you find reliable, and safe for purposes of instruction.



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Acknowledgements:

- The Laboratory Safety Institute- Safe Science at Home, Science Safety Rules Agreement
- NSTA Position Statement- Liability of Science Teachers for Laboratory Science
- When in doubt about safety and liability issues related to any hands-on activities, refer to the [Science Safety Handbook for California Public Schools](#).



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Dear Student, Parent/Guardian:

In order to provide and maintain a learning and working environment that is as safe as possible for you, your science teacher will:

- exercise reasonable judgment when conducting laboratory investigations;
- minimize, if not eliminate risk by using virtual laboratory simulations/investigations;
- accept the **duty of care** to provide all students and staff with the safest environment possible when performing hands-on science investigations or demonstrations in the classroom or at-home setting.

To ensure that science experiments at home are safe, positive learning experiences, students and parents should read, discuss, and sign this science safety rules and procedures agreement. The student, parent, and science instructor should each keep a copy for their records.

1. Read and understand the lab procedure before beginning. Do not deviate from or do anything that is not part of the approved experimental procedure. Read the written procedures in advance and understand what you are going to do. Lack of familiarity wastes your time and is a major cause of injury. Know the potential hazards before you do the experiment. Follow all instructions given by your instructor or adult supervisor.
2. Only perform experiments recommended by your instructor.
3. Be properly prepared to do the experiment by having all necessary materials and the directions readily available. Do not substitute any materials without getting approval from your teacher. Discuss any concerns you have with your instructor prior to doing the experiment.
4. Make sure you pay close attention to any safety warnings your teacher discusses as they relate to the experiment.
5. Protect your work surface against any materials which could stain or damage countertops or furniture. All experiments should be performed on surfaces that can be easily cleaned or wiped up.
6. When doing an experiment in distance learning instruction, be sure to activate your video component to insure appropriate teacher supervision.
7. If you have siblings and/or pets, make sure they can't interrupt your experiment or distract you.
8. In most cases, at-home experiments assigned by a teacher would probably be considered extremely low-risk and NOT require protective eyewear. IF your teacher requires you to participate in an experiment that requires protective eyewear (i.e. goggles), the school must provide them. As an alternative to this, your teacher may demonstrate the experiment and/or videotape it for your observation.
9. When doing at-home experiments, you should wear closed-toed shoes and clothing should not be loose and floppy, but arms and legs should be covered. Tie back long hair.



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10. Prior to doing any at-home experiments, review with your parents your family’s emergency evacuation plan and location of a first aid kit.
11. Act in a responsible manner at all times. No horseplay should occur in the experiment area.
12. Never taste, eat or drink any materials you work with in an experiment. Eating, drinking, and storing food in your work area are forbidden during the experiment.
13. Be sure your work area is free of clutter, with plenty of room to work.
14. Heat sources (i.e. candles, matches, stove/oven) are not recommended for at-home science. However, some experiments may require use of hot/warm water from your tap--be careful when using anything with extreme temperatures. Be sure to follow all safety guidelines provided by your teacher. If you burn yourself, treat immediately by putting the burned area under cold water for at least 15 minutes.
15. Report all accidents, injuries, and close calls to both your teacher and parents/guardian immediately.
16. List your allergies on the bottom of this page. If any experiment deals with something to which you are allergic, be sure to tell your teacher BEFORE the experiment begins.
17. Wash your hands with soap and water for at least 20 seconds BEFORE and AFTER every experiment. Be sure to clean your work surfaces with an appropriate disinfectant frequently.
18. If your teacher/school provides you with a science kit, it should be stored so that small children or pets can’t reach them.
19. If you have any questions or confusion around the experiment or the procedure(s), DO NOT proceed until you seek clarification from your teacher.
20. Be extremely careful when navigating the internet. Only open links that are reliable, safe and recommended by your teacher and/or parent/guardian for purposes of instruction.

I, _____ have read, understand, agree to follow these science safety rules and procedures. I agree to abide by any additional instructions, written or verbal, provided by my science instructor or adult supervisor. I realize that my failure to follow these rules and instructions may result in my permanent suspension from this class.

Student’s Signature _____ Date _____

Parent’s Signature _____ Date _____

* List any allergies or medical problems that your teacher should be aware of:



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SAFETY FIRST



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