



Conversation Checklist

Plan with staff of the organization hosting your outreach

As a chemist, you know the standard operating procedures and safety protocols for the labs you have worked in. You have your own splash goggles and lab coat, and you know how to use them! But the situation is more unknown when engaging the public where they are—at a shopping mall, baseball stadium, science center, library, outdoor festival, or school. Activities and demos that are safe to conduct in your lab are not necessarily safe when working with the public at a facility that is not equipped for science.

Meet with staff at the facility where you plan to hold your outreach event. Ask the questions in this document, and discuss your mutual concerns. Your communication and careful planning with facility staff will help them feel at ease about hosting your event, while also ensuring that you have what you need to conduct the activities safely.

- 1. What are the typical ages and numbers of children in attendance at the facility on the day and at the time of the outreach event?**
 - Knowing this will help you select appropriate activities and will help your activity facilitators practice their explanations. It will also help you determine the quantity of supplies you should bring.
- 2. What is the protocol to reunite children with their responsible adults, administer first aid, and report injuries?**
 - Institutions that serve children and the public typically have procedures in place to handle issues such as injuries and children separated from their responsible adult. Find out what these protocols are so that you and your volunteers can follow them and refer members of the public to appropriate staff members as needed. If established procedures are not in place, decide together how you will handle these types of issues if they occur.
- 3. Is there a special entrance or check-in procedure for activity facilitators and other event volunteers?**
 - Find out what your activity facilitators need to know or do to ensure that they have a frustration-free experience getting to your event. They may need to enter the building to help set up before the building is open to the public. There may be a different entrance to use before the building opens or a check-in procedure that guests or visitors to the building must follow. It is not uncommon for a facility to request a list of names of all expected volunteers for your event. Find out whether volunteers and staff who work with children must pass background checks, show ID, pay admission, or provide specific information.
- 4. What are the emergency procedures for clearing the building or sheltering in place?**
 - Find out where the emergency exits are and what to do if an emergency occurs. Then you can help direct your volunteers, while facility staff deliver instructions to the general public.
- 5. Is there a dress code for volunteers to follow?**
 - Find out whether activity facilitators should be dressed professionally or casually, should wear lab coats, and should wear closed-toe shoes. You may choose to provide a shirt, sticker, or badge for activity facilitators and other event volunteers to wear that lets the public know that they are volunteer scientists representing a particular university or organization, such as the American Chemical Society.
- 6. Will the facility be able to provide tables? Will staff be available to set up and take down tables?**
 - Whether conducting hands-on activities or a demo show, you will need multiple flat surfaces. You will need one or two tables pushed together for each hands-on activity, along with an entrance table and an exit table to distribute and collect safety glasses or splash goggles. If presenting demos, you may want at least one table for the presentation and another table to organize supplies. Some presenters use several tables pushed end to end in a long line so that they can move down the line conducting one demo after another and minimize transition time.
- 7. What kind of table layout works well in the space?**
 - If possible, conduct a site visit of the proposed space or spaces for your event. Consider locations of tables and how traffic might flow through the space. Once you have decided on the positions of tables, make a map of the space and the table arrangements.

- If conducting hands-on activities, you may need to request stanchions or additional tables to establish one-way entrance and exit points. This is especially important if you are loaning safety glasses or splash goggles to children. Keeping people corralled to a certain extent encourages them to return these items to you so that they can be cleaned and ready for the next participant.
- 8. What is the composition of the floor? How will you handle spills?**
- Whether the floor is smooth or carpeted or the ground is cement or grass makes a difference in how you will plan activities and prepare for accidents. If there is a chance of splashes onto a carpeted floor, you may place a tarp beneath the activity area or move the table to an area with a floor that is easier to clean.
 - A smooth floor could become slippery as a result of splashes or spills. If paper towels are not sufficient to wipe up the spilled liquid, perhaps the facility can provide a mop and bucket, and a “wet floor” sign to prevent participants from slipping and falling while the area is being cleaned.
 - Identify the maximum volume that would need to be contained and the nature of the potentially spilled liquid (corrosive, flammable, etc.).
- 9. Will there be access to electricity?**
- If you need access to electricity, consider how much you will need. Find out whether extension cords are permissible. If so, determine who will provide them.
- 10. Where will the audience be seated in relation to the demonstrator?**
- If you are conducting a demo show, an elevated stage may help people see the presentation. Whether or not there is a stage, demarcate a distance of at least 10 feet (3 meters) away from the presentation area, to ensure that the audience is kept at a safe distance. One way to do this is to make a line with tape to indicate where children should sit. If you do not have a physical marker, the audience is likely to gradually move closer to the presenter during the demo show.
- 11. What emergency equipment is available at the site?**
- If you need a shield to adequately protect the audience, find out whether the facility can provide one or whether you should bring your own.
 - Can the facility provide fire extinguishers, spill kits, chemical-resistant gloves, and fume hoods or adequate ventilation? Be prepared to bring your own emergency equipment.
- 12. Can contaminated or used liquids and solids be disposed of properly on-site?**
- The best way to handle unwanted chemicals and used supplies is to take them with you when you leave. This releases the host facility from the burden of managing your trash and will ensure that it is disposed of properly.
 - Some facilities, in particular those with a chemistry lab, may be able to properly handle and dispose of unwanted chemicals and used materials. In these cases, before deciding to dispose of your trash at the host site, consider whether it will be safe for custodial workers to handle. In the case of a school or after-school program, children and teens might dig into the trash after you leave to do some experimenting on their own.
 - If you and the facility agree that your unwanted chemicals and used materials can be disposed of safely on-site, plan how to properly dispose of these items. Let the facility know specifically what you plan to dispose of in their trash and what you plan to dispose of down their drains. Request dedicated trash cans for the activity facilitators to use, as well as access to water and a drain for liquids. Bring sodium bicarbonate (baking soda) and citric acid to neutralize acids and bases before pouring them down the drain.
 - If your event is outdoors, you must take unwanted solids and liquids with you. This can be done by pouring used liquids into plastic bottles with caps or absorbing liquid with paper towels and placing them in a bag with the used solids. Even if there are trash cans at the outdoor site, take the bag containing the event’s trash with you to dispose of at your home, office, or lab as appropriate.
- 13. Can ventilation be increased during the event?**
- Look at the SDSs for the reactants and products. If the phrase “Use only outdoors or in a well-ventilated area” appears in the precautionary statements, adequate ventilation must be provided. If there is any doubt about the ability of the facility to provide enough ventilation, do not include the demo or activity in your program.
 - If there is a chance of strong odors or fumes, find out whether the facility can increase ventilation. If not, consider a different demo or activity. Strong smells, especially unpleasant ones, should be avoided.

14. What are the regulations and protocols for chemical demos at the facility?

- Provide descriptions of the activities and demos you plan to conduct, along with a list of the reactants and products.
- Find out whether the facility has rules, guidelines, or regulations pertaining to flames, loud noises, toxic substances, projectiles, and pressurized containers before deciding to conduct demos or activities that involve these hazards.
- If an activity or demo will produce loud noises or sudden flashes, discuss how best to handle these. For example, calmly warn the audience about these surprises in advance, so that they can prepare themselves both physically and mentally.
- Does the facility have requirements for personal protective equipment (PPE) such as gloves, lab coats, shoes, or eye protection? If so, follow their recommendations or exceed their minimum requirements.

15. Is fire permissible? If so, what approvals need to be obtained in advance?

- Even though fire is a staple at many chemistry demo shows, it really is best to avoid it.
- If you and the facility staff agree that fire is appropriate, establish fire safety protocols together. First, notify the appropriate staff at the facility and security administrators. If planning your event at a school, you may need to contact the local fire marshal, police, and school board, in addition to the principal or headteacher.
- Does the facility have an appropriate class of fire extinguisher that you can use? You may need to bring one yourself.
- Additional ventilation is required when conducting combustion reactions.
- Share the fire prevention strategies and safety precautions that you will prepare and have in place. Handle flammable liquids safely. Bring only needed amounts. Keep bottles capped and stored properly. Never add flammable liquids after ignition, to avoid flame jetting.
- Items such as isopropyl alcohol, hand sanitizer, and even cornstarch dust clouds formed by pouring cornstarch are all flammable. So even if you are not planning to do a combustion reaction of any type, a fire may occur. Let the facility know if you plan to use flammables and how you plan to use them, so that they can prepare accordingly. Discuss how you will handle unintentional fires.

16. Is there an appropriate space for people to eat?

- If the event will last several hours, you may want to feed your volunteers snacks or a meal. Request an additional space, away from the public eye, for volunteers to eat, drink, and rest. Do not allow tasting or eating near the hands-on activities or demo area.
- If you are planning an edible activity, like liquid nitrogen ice cream, conduct it in a space where food is consumed and away from the other “lab” activities. Take precautions to be hygienic and follow food safety protocols.

17. How is shared equipment cleaned at the facility?

- With the recent heightened awareness of the spread of communicable diseases, the facility has probably implemented additional cleaning practices for shared equipment and surfaces. Follow their recommendations or exceed their requirements. Discuss how you plan to clean safety glasses and splash goggles as well as equipment such as droppers, stirring rods, beakers, cups, containers, and shared work surfaces.