Visitor Safety for Programs, Events, and Demonstrations

Interactivity 2019
Why are we here?

Safety is a big topic with sometimes overwhelming topics and considerations.
Why are we here?

Today let’s zoom into everyday safety topics that are also important.

- Demonstrations
- Big events
- Crowd control
- Community partners
Presenters
Cheryl McCallum, EdD
Children’s Museum of Houston
Phil Rechek
Children’s Museum of Eau Claire
Jon Handwork
Children’s Museum of Denver at Marsico Campus
David Sittenfeld
Museum of Science, Boston

Moderator: Darrell Porcello, PhD
Children’s Creativity Museum
X-treme Spring Break
Pi Fight on Pi Day
New Years Noon
Science Demo
Post Science Demo
Safety Considerations with Community Partnerships

Philip Rechek
Vice President of Operations
Children’s Museum of Eau Claire
Eau Claire, WI
## Types of Volunteers

<table>
<thead>
<tr>
<th></th>
<th>Individuals</th>
<th>Special Event Volunteers</th>
<th>Community Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background Check/Training</td>
<td>Yes/Yes</td>
<td>No/Very Little</td>
<td>No/No</td>
</tr>
<tr>
<td>Frequency of volunteering</td>
<td>Multiple times</td>
<td>Single time</td>
<td>Single time</td>
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Special Events Volunteers

How is everything going? Did the volunteers all show up?

As you can see, the event is going well. Enjoy your vacation. 😊
## Special Event Volunteers

<table>
<thead>
<tr>
<th>Pre Event</th>
<th>During Event</th>
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<tbody>
<tr>
<td>• Ask lots of questions</td>
<td>• Identify groups as needed</td>
</tr>
<tr>
<td>• Verify numbers</td>
<td>• Allow time for questions</td>
</tr>
<tr>
<td>• Identify leadership</td>
<td>• Make them identifiable</td>
</tr>
<tr>
<td>• Prepare specific task using accordion approach</td>
<td>• Monitor for problems</td>
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<tr>
<td></td>
<td>• Reassign tasks/groups as need</td>
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</tbody>
</table>


Outside Experts/ Demonstrations
## Community Demonstrations

<table>
<thead>
<tr>
<th>Pre Event</th>
<th>During Event</th>
</tr>
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<tbody>
<tr>
<td>• Ask lots of questions</td>
<td>• Check in with coordinator</td>
</tr>
<tr>
<td>• Specify questions to the event/safety concerns</td>
<td>• Inspect demo before start</td>
</tr>
<tr>
<td>• Identify leadership</td>
<td>• Have staff present</td>
</tr>
<tr>
<td>• Identify special requirements</td>
<td>• Ensure equipment is not left alone</td>
</tr>
<tr>
<td>• Verify setup/take down</td>
<td></td>
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</table>
Partnering with EMS services
Visitor Safety
Preparation & Day of Response
Proactive Manager on Duty – Leadership Program
Crowd Control
Explore Science:
Let’s Do Chemistry Safety

David Sittenfeld,
Museum of Science, Boston
ACM National Meeting
Denver, Colorado
Explore Science: Let’s Do Chemistry kits

250 physical kits distributed across the US museums, universities, ACS Local Sections & Student Chapters
LDC Events across the United States
Moving Beyond Safety Rules – “RAMP”-ing Up for Safety

Recognize the hazards

Assess the risks from the hazards

Minimize the risks from the hazards

Prepare for emergencies

Hazard Assessment

Developed by Robert E. Hill and David F. Finster in their textbook, *Laboratory Safety for Chemistry Students*
• What hazards exist?
• What associated risks may arise from these hazards?
• How can we minimize risks through protocols we have designed into the activities and training materials?
• How should safe practices and protocols best be communicated with facilitators, visitors, and others?
Explore Science: Let’s Do Chemistry
Chemical Safety Resources

- Chemical Safety Guide
- Activity Guides
- Training Videos
- Personal Protective Equipment/tools (for visitors & facilitators)

Science Museum of Minnesota
Safety Guide

Use this guide as you plan your Let’s Do Chemistry event and as a resource before training, demonstrating, or facilitating the activities.

Guide covers:

• Let’s Do Chemistry kit safety practices and protocols
• General chemistry safety guidelines, protocols, and precautions
• Additional safety tips
• Chemistry materials and supplies
• Additional resources
The Guide Is Intended to:

• **Prepare** the event organizer for the safety information embedded into each individual activity’s training and facilitation materials,

• **Communicate** strategies, protocols, and practices that will be important when preparing for, hosting, and cleaning up from the event, and

• **Assure and instill confidence** in event organizers about hosting their event from a chemical safety perspective.

• **Provide resources** on the topic of chemical safety, if the host/organizer wishes to do more chemistry activities at their institution.
Guidelines,Protocols,& Precautions

– Preparing and Doing the Activities

– Engaging in Chemistry Activities with Visitors and Children

– Training and Working with Facilitators and Guest Educators
Orienting Organizers to Safety Information: Rocket Reactions

**SAFETY**
- All facilitators and participants must **wear safety goggles** during this activity. While baking soda and citric acid are commonly handled household materials, these substances and the products of the chemical reaction can splash into someone’s eye and the caps can move quickly through the air.
- Modeling good safety practices is an important learning goal for chemistry activities.
- The kit includes two different sizes of safety goggles (adult and child). Fit the appropriate size goggle to each participant. For very small children, you may need to use a binder clip to make the headband fit more snugly. Fold the band over itself and secure it in place.
- All beakers should be labeled with the correct chemical names.

**CLEAN UP**
- Rise any dirty tubes and caps.
- Dump out extra water.
- Empty the extra citric acid and baking soda into their respective containers if they are dry and you are certain there has been no cross contamination.
- If the rockets have splashed onto the floor around your location, you can mop up the area or wait for the materials to dry and then sweep or vacuum.

**FACILITATION NOTES**
- This activity makes a great connection to the 2018 National Chemistry Week theme: Chemistry is Out of This World! If participants are interested, encourage them to explore the information sheet about how real rockets are fueled and launched. (Hint:
Sublimation Bubbles
Principles of Green Chemistry/Additional Resources

- **ACS resources** (in the Let’s Do Chemistry kit)
- **National Science Teacher Association resources:** can be found at [http://www.nsta.org/safety/](http://www.nsta.org/safety/).
- **Emergency protocol resources**
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Any opinions, findings, and conclusions or recommendations expressed in this presentation are those of the authors and do not necessarily reflect the views of the Foundation.
Thank you!

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Questions?
Now let’s role play... Day one planning.

<table>
<thead>
<tr>
<th>Cheryl</th>
<th>Phil</th>
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<tbody>
<tr>
<td>Giant Public Event</td>
<td>New Partner</td>
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<tr>
<th>Jon</th>
<th>David</th>
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<tbody>
<tr>
<td>Indoor / Outdoor Fall Festival</td>
<td>Hands-on Activity Chemistry Festival</td>
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Thank you for attending!

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David Sittenfeld - dsittenfeld@mos.org
Museum of Science, Boston

Darrell Porcello, PhD - porcello@gmail.com
Children’s Creativity Museum
Session Resources

O Wow! Moments videos with safety examples (Children’s Museum of Houston)
https://www.cmhouston.org/videos#/Mr.O
Let’s Do Chemistry Safety Guide (NISE Network/Museum of Science, Boston)
ACM portal login for safety planning examples