**R A M P Up Your Lab Activities and Demonstrations Template**

Before performing any demonstration or having students complete laboratory activities, use this template to RAMP up safety. **RECOGNIZE** potential hazards, review the chemicals, equipment, and procedures used. (Common hazards are shown on the back of this page.) **ASSESS** and **MINIMIZE** the risks from those hazards and **PREPARE** for emergencies.

<table>
<thead>
<tr>
<th><strong>RECOGNIZE the hazards</strong></th>
<th><strong>ASSESS the risks of hazards</strong></th>
<th><strong>MINIMIZE the risks of hazards</strong></th>
<th><strong>PREPARE for emergencies from uncontrolled hazards</strong></th>
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</thead>
<tbody>
<tr>
<td>Identify Globally Harmonized System (GHS) hazards* present in activity, including reactants and products. Identify the process (temperature, pressure, electrical) hazards.</td>
<td>Think about how you might be exposed to the hazard and the results of exposure. Identify the most important risks that you will manage.</td>
<td>Evaluate all chemicals, equipment, and procedures and identify ways to minimize risks that are present. Layer controls if needed to improve protection (e.g. goggles and shield)</td>
<td>Know how to respond to chemical exposure, spills, cuts, fires, burns, and other possible incidents. Test emergency equipment. Practice emergency protocols.</td>
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|---|---|---|---|
| **Broken glassware** | • Cuts and scratches on the skin  
• Glass sharps in the eye | • Handle broken glassware with gloves.  
• Do not allow students to clean up broken glassware.  
• Always wear safety goggles when handling chemicals in the lab.  
• Do not soak dishes in cloudy sink water where broken glassware is not visible. | • Broken glassware box in the laboratory.  
• Small broom and dustpan.  
• Wear protective eyeware. |
| **Fire** | • Burns to people and equipment  
• Ignition of volatile liquid vapors  
• Smoke inhalation | • Do not open flammable liquid bottles in the presence of a flame or hot surface.  
• Always use caution around open flames. Tie back long hair, secure loose clothing, and never reach over an open flame.  
• Keep flames away from flammable substances.  
• Exercise caution when using a heat source. Hot plates should be turned off and unplugged as soon as they are no longer needed.  
• Remove excess solvents from work area | • Dry chemical (ABC-type) fire extinguisher.  
• Fire blanket on wall.  
• Know location of gas master control valve.  
• Lab safety shield for demonstrations  
• Review Safety Data Sheets and pay particular attention to Section 5 for firefighting measures and special extinguishing materials |
| **Acid or base** | • Irritation/corrosion of skin and eyes  
• Respiratory distress | • When working with acids and bases, if any solution gets on your skin immediately rinse the area with water.  
• When diluting acids, always add acid to water.  
• Use minimum concentration necessary. | • Eyewash station  
• Shower or body drench hose  
• Review Safety Data Sheets.  
• Ventilation fan  
• Baking soda/Citric acid to neutralize spills – do not use on skin. |
| **Spills** | • Possible irritation of skin and eyes  
• Respiratory distress  
• Flammable vapors | • Neutralize acids with sodium bicarbonate.  
• Neutralize bases with citric acid.  
• Extinguish sources of ignition for volatile liquid spills. | • Ventilation fan  
• Dry sand and vermiculite or cat litter  
• Review Safety Data Sheets |