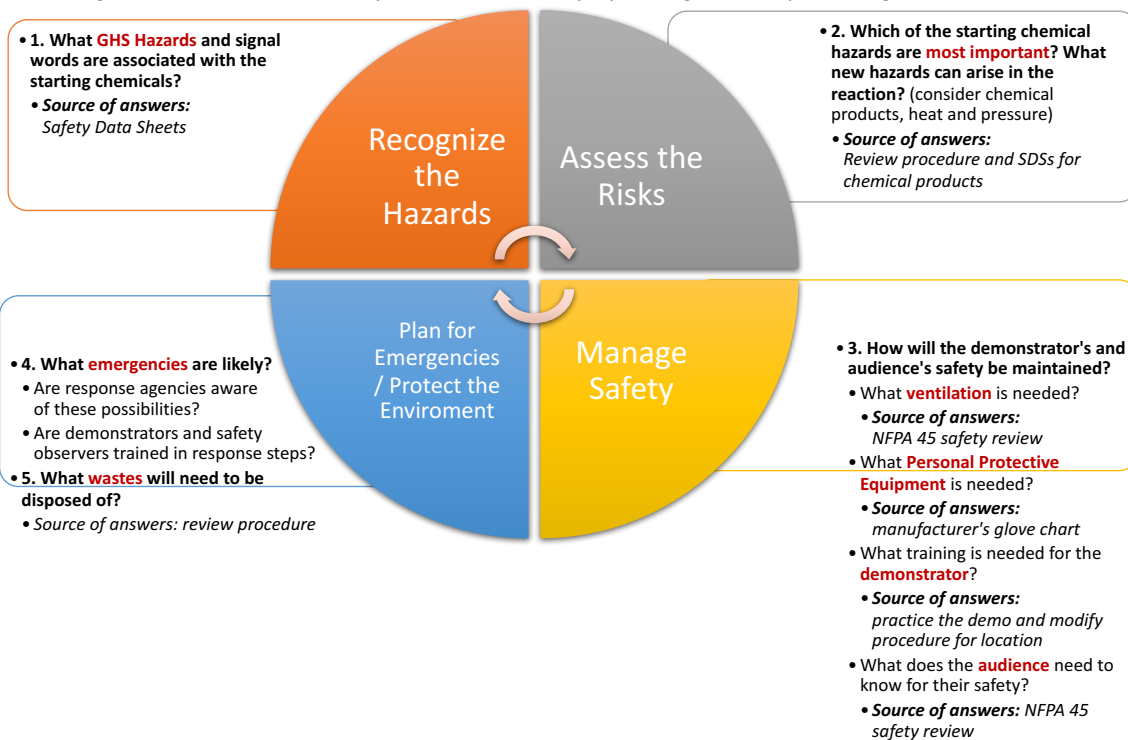


Building the Safety RAMP for Chemistry Demonstrations and Supervised Labs

Opening Question: What are the **science learning goals** of this work?

Closing Question: What science and safety **Lessons Learned** should you pass along to the next person doing this?



RAMP Safety Assessment Rubric for Chemical Demonstrations and Videos

Evaluation Scale	Problematic (up to 1 pt)	3 - Average (up to 3 pts)	Excellent (up to 5 pts)	Points awarded
Pedagogical Intent	Attention getting only: no science concept mentioned	Concept explained no student inquiry encouraged	Discussion of application of concept	
Safety education included	Injury or illness involved in video	Safety concerns described during video	Pre-demo safety info included	
Venue appropriateness	Work Space clearly not appropriate for chemistry performed	Some concerns about space arise during course of work	Space has appropriate equipment and layout for chemistry performed	
Audience appropriateness	Audience not age appropriate for this level of chemical hazard	Audience instructions appropriate to age group involved	Discussion of changes necessary for other audiences included	
Recognize Hazards	No information about chemicals used or process provided	Key chemicals identified, no safety information provided; No process hazards identified	Clearly identified chemicals with form, concentration, and amounts; process hazards described	
Process hazards are changes	in temperature, pressure	or potential unplanned chemical reactions.		
Assess Risks	No risk information provided	Some or all risks implicitly prioritized	All chemical and process risks clearly prioritized	
Manage Safety				
Ventilation	Ventilation concern arises in the course of the video (e.g. smoke obscures visibility)	Ventilation concerns implicitly addressed by equipment used	Ventilation requirements explicitly mentioned as part of the video	
PPE for demonstrator	No PPE or problem resulting from demonstrator's PPE arises in the course of the video	PPE appropriate for chemistry and worn correctly	PPE appropriately used and explained	
PPE for audience	Problem resulting from audience PPE arises in the course of the video	Appropriate PPE used	PPE appropriately used and explained	
Instructions for demonstrator	No evidence of planning - confused presenter throughout	Some confusion as demonstration proceeds	Presenter clearly in control and experienced with demonstration	
Instructions for audience	Audience injuries from lack of instruction	Audience participates in an orderly fashion; presenter understanding of risk implicit	NFPA style briefing for audience	

Plan Protect				
Coordination of Plans with Host or Emergency Responders	Demonstrator or audience injured without backup	Possibly addressed, but unclear	Explicitly mentioned as part of discussion	
Appoint Safety Assistant	Demonstrator or audience injured without assistance available	Possibly addressed, but unclear	Training provided for safety assistant	
Fire Precautions	Unplanned fire	Possibly addressed, but unclear	Fire preparations explained	
Medical Emergency Precautions	Demonstrator or audience injured without backup	Possibly addressed, but unclear	Explicitly mentioned as part of discussion and equipment displayed	
Hazmat Spill Precautions	Demonstrator or audience injured due to spill or release	Possibly addressed, but unclear	Explicitly mentioned as part of discussion and equipment displayed	
Waste Disposal Practices	Environmental damage likely to result from waste disposal shown	Mentioned in passing	Clearly discussed	
Comments and other Observations:				
Point Total:				
Recommendation:	<i>Don't use for safety reasons (don't do this anywhere)</i>	<i>Show video to start "safe science" diecussion</i>	<i>Use as the basis for live demonstration</i>	