

Demonstration Risk Assessment Form

SCIENCE IN SCHOOLS- Secondary CPD
APRIL 2021

This is a CPD training session for Secondary School teachers. It will mostly contain activities that do not need any safety mitigations (apart from common sense) however the below demonstrations/ activities do require a risk assessment:

1. CO² Candle Extinguisher
2. Making a Hot Drink

Likelihood		Severity of impact		Current risk
Certain	5	Death or total destruction	5	Multiply Likelihood and Severity of impact to get Current Risk rating
High	4	Major injury or damage	4	
Medium	3	Serious injury or damage	3	
Low	2	Minor injury or damage	2	
Very low	1	Negligible	1	

Action Rating	
10 and above	The work is too dangerous and should not be undertaken
8 or 9	The work is high risk. Those undertaking the work must be fully competent and experienced for the type of work, equipment to be used and fully understand all risks present.
5 or 6	Moderate risk Workers must be fully competent for the type of work and risks present, or under competent supervision.
4	Low risk. Those undertaking the work must be aware or be made aware of the risks and mitigation measures required.
2 or 3	Slight risk. Those undertaking the work should be aware or be made aware of the risks and mitigation measures required.
1	Insignificant risk. Activity suitable for all workers

Risk assessed by: Fran Scott
Date of last review: 15/04/2021
Review date: 14/04/2022

Demonstration: CO² Candle Extinguisher

Those at risk (please tick)	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y	Y	Y		

Method Statement	Hazards	Mitigation	Likelihood	Severity of impact	Current Risk
<p>Approximately 200mls of vinegar is poured into a 3ltr jug. Into which approximately 20g or one heaped tablespoon of bicarbonate of soda is added, quickly and briefly stirred around and left to sit still while it produces CO₂.</p> <p>While the reaction takes place, 3 tea lights are lit and placed into a clear box with stepped shelves, one candle on each shelf, and towards the audience side of the box. (The steps should rise from right to left as the audience sees them)</p> <p>When the reaction in the jug has settled down, the presenter carefully lifts the jug and slowly pours the CO₂ that has collected into the box from the near side and in the stage left corner. The candles should go out, one at a time and before the liquid is poured from the jug.</p>	Lighter presents small fire risk	<p>Only presenter to use lighter. And lockable long handled lighter will be used where possible.</p> <p>If lighter is lockable it is to be stored in lockable container with gasses. If not lockable (or lock is unreliable) then it is to be stored away from flammables and oxidizer.</p>	1	1	1
	Candles present small fire risk	<p>Only presenter to handle candles. Candles are not moved once lit and never left unattended.</p> <p>The candles used will be tealights such that they rest in a stable fashion on a flat surface</p>	1	1	1
	Vinegar presents slipping hazard of spilt	Any spillages to be cleaned up at the earlier convenience	1	1	1
	Burn risk from candles/lighter	A long handled lighter will be used to ensure ample distance between the presenter's hand and the lit candles.	1	1	1

PPE Requirements

Item	Item	Item	Item
Flameproof overalls	Gloves contact	High visibility	Waterproof clothing
Hardhat	Dust Mask	Gloves chemical	Wellington boots
Hearing protection	Mask chemical vapour/mist	Safety shoes	Eye Protection

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Demonstration: Making a Hot Drink

Those at risk (please tick)	Ri Staff	On-Stage Volunteers	Audience	Non-Ri Workers	Others
	Y		Y		

Method Statement	Hazards	Mitigation	Likelihood	Severity of impact	Current Risk
Presenters will talk through the process they take to make a hot drink of their choice (cup of tea/ coffee/ hot chocolate etc).	Contamination of foodstuff	Ensure that the food items (tea bags, coffee granules etc) are kept in sealed containers away from any chemicals used in the other shows. The presenter will also clean their hands before using the food stuff. The presenter will wash their mug out after and before each use to ensure that there is no contamination/ mould growth for when they use it (as it may go a while without being used)	1	1	1
	Hot liquid	The boiled water needed for this demonstration will be obtained from the school kitchen (or the presenters will be provided with a thermos flask if required). It will be ensured that the water will be kept away from electrical equipment. Cloths will be on stand by in case of any spillages.	1	1	1

PPE Requirements

Item	Item	Item	Item
Flameproof overalls	Gloves contact	High visibility	Waterproof clothing
Hardhat	Dust Mask	Gloves chemical	Wellington boots
Hearing protection	Mask chemical vapour/mist	Safety shoes	
	Laboratory Coat	Eye protection	