

Science Oxford Risk Assessment

Risk assessment for: Fire Show

Key – **P**=Presenter/Facilitator **A**=Audience/Workshop Attendees **V**=Volunteer(usually in show)

General safety precautions for the Fire Show:

Audience is at least 2m away from the front, and before anything is lit they receive a safety briefing; this tells them not to move closer than 2m, and not to try anything they see at home.

Presenter wears eye protection throughout the show. If the presenter has long hair, they must tie it back. There is a fire extinguisher as part of the Fire Show kit.

Activity	Hazard	Persons in Danger	Severity (1-5)	Likelihood (1-5)	Risk (S x L)	Control Measures	Safety Advice Given to Visitors
Candle on stage	Candle being knocked over	P	2	1	2	Candle is in a stable candle-holder, and always on a heat-proof mat	
Set fire to a strip of paper	Burns	P	2	2	4	Small strip of paper is used, held at a distance using tongs. Burning is only done over a heat proof mat	
Setting fire to a banknote which has been dipped in surgical spirits and water	Burns	P	2	2	4	Bank note held using tongs. Burning is only done over a heat proof mat	
A flame is held under a balloon full of water, all of which is held over a volunteer's head	Slip	P, V	2	1	2	Enough tissue is part of the kit to clean up any spills if the demonstration doesn't work and the balloon pops	If it does pop, to be careful walking back to their seat
Fire Piston	Fuel smouldering after	P	1	1	1	Only use cotton wool	

	demo is finished, potentially setting alight to other items on the table, such as paper					as the fuel source, as this flashes quickly, then doesn't smoulder. After the demo, double-check the equipment to ensure it isn't smouldering	
Dipping a candle into a container of air, and a container of CO2	Burns from the candle. Slip hazard from the bicarb/vinegar reaction used to produce CO2, if it overflows	P	2	2	4	Ensure candle is of sufficient length to dip safely. Only hold candle over a heat-proof mat. Mix vinegar and bicarb to produce CO2 in the middle of the table, so any overflow doesn't become a slip hazard	
Heating a metal knife up using a kitchen blowtorch	Burns, either from the blowtorch directly, or through the heating of the knife	P	2	2	4	Presenter receives training on how to light and handle the blowtorch safely. Presenter wears thick gloves to protect the hand holding the knife. Tongs not used to hold knife, as this would be less secure than suitably protected hands.	
Blowing custard powder through a blowtorch flame to create a small fireball effect	Burns	P	2	2	4	Blowtorch is secured tightly with a stable clamp stand. Presenter bends down below the level of the blowtorch, and ensures funnel full of	

						custard powder is held at least one metre away before blowing upwards through the blowtorch flame. Ensure the ceiling of the venue is at least 2m above the area the demo is being conducted.	
Burning Copper Chloride, Strontium Chloride and Salt	Copper Chloride is harmful if swallowed. Burns.	P	2	1	2	Wear gloves when spooning out chemicals onto watch glasses. Only light the chemicals when the watch glasses are on a heat-proof mat. Use either a long match, or a long 'barbeque' lighter.	
Bottom of a candle has been carved off to show wick. A metal skewer is then pushed through the centre of the candle. This is then balanced on two glasses, and both ends of the candle lit	Burns	P	2	2	4	Ensure that the demonstration only takes place on a heat-proof mat	
A teabag is set alight	Burns	P	1	1	1	Ensure that the teabag is lit while on a heat-proof mat.	
Fire Tornado	Burns – either if the tornado base is	P	2	2	4	Ensure that the tornado base is on a	

	knocked over, or by touching the metal cage too quickly after the demonstration					stable, level surface. Ensure that the cage is left untouched until it has cooled down	
Hair spray is sprayed into a Pringles tube, which has a hole in the bottom and is mounted at a 45 degree angle. A flame is then introduced into the hole in the bottom, and the lid flies off as the hairspray ignites	Burns. Hit by the flying lid.	P	2	2	4	Ensure that the Pringles tube is pointed away from the audience, and away from where the presenter will be standing. Presenter stands behind the tube at all times.	