

















Process/Equipment: Kickstart HSC Physics Workshops	Location : Second Year Laboratory or off-site	
Procedure Developed by : Lara Davis	Approved by : Phil Dooley	Date : 11/6/8
Personal Protective Equipment Required (Check the box for required PPE):		
 <input checked="" type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
 <input type="checkbox"/>	 <input type="checkbox"/>	 <input checked="" type="checkbox"/>
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 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
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Apparatus	Activity <i>(Steps in the process/task)</i>	Hazards Identified <i>(What could cause an injury)</i>	Risk Score <i>(How harmful is it)</i>	Controls <i>(What can be done to minimise the risk of injury)</i>
Jumping rings	Push the button on the capacitor to make the rings leap into the air.	Projectiles in a confined space could cause eye or face injuries.	4	Ensure observers are at least 2 metres from apparatus. Only to be operated by a trained demonstrator.
Wimshurst Generator	Turn on switch to start the wheels turning. Electrical current and voltage will build.	Potential burns/shock from charge build up. Hair/clothing could get caught in the motor.	5	Only to be operated by a trained demonstrator. All metallic objects (eg rings/watches) to be removed before operating equipment. Pregnant ladies or people with pace makers are not to use equipment. Only one student at a time to take part in this activity. Operator to have hair and clothing secured or tied up before operating equipment. RCD (residual current devices), surge protectors and circuit breakers are all used on electrical equipment.
Power supply	Operates all electrical equipment in the lab. Switch on and adjust voltage and current dials to settings appropriate for equipment.	Electrical shock and burns.	6	Overload switches installed. Only trained operators to use power supply. Students are constantly supervised. Electrical equipment is e-tagged on a regular basis. RCD (residual current devices), surge protectors and circuit breakers are all used on electrical equipment.
Liquid nitrogen	Decanting liquid nitrogen from flask into petri dish. Place objects into dewar of liquid nitrogen.	Possibility of cryogenic burns on exposed skin. Asphyxiation danger.	6 4	Only trained operators to use liquid nitrogen. PPE is to be worn (gloves, goggles, covered shoes) and only tongs are used to manipulate objects which have been placed in the liquid. Students to wear PPE when taking part in demonstration, and be under supervision by demonstrator. Demo only to take place in large or well ventilated area
Van der Graaf Generator	Build up charge, touch hand to dome to transfer static to volunteer, discharge using wand.	Minor shock from electrostatics. Shock from electrical failure.	4 5	Ensure all participants are supervised by an adequately trained demonstrator. Label with 'high voltage' signs. Regular safety checks and electrical tagging.

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Light and Laser demo		Chance of eye damage. Electrical failure could lead to electrical shock.	4 6	Label hazardous beam exit. Supervision of demo by informed demonstrator. Regular safety checks and electrical tagging.
Strong rare earth magnets	Drop them through a cylinder.	The magnetic attraction between the magnets is very strong. It's possible that skin may get pinched between two magnets.	6	Warn students of this possibility. Avoid using more than one magnet at a time.

Found a hazard? Think about:	How severely could it hurt someone? ▼		
How likely is it to hurt someone? ▼	!!! kill or disable	!! several days off work	! first aid
very likely ++ could happen regularly	1	2	3
likely + could happen occasionally	2	3	4
unlikely - <i>could</i> happen, but only rarely	3	4	5
very unlikely -- <i>could</i> happen, but probably never will	4	5	6

The numbers show how important it is to do something:

1 do something immediately

6 do something when possible.