

**Major or Standard Events - Risk Assessment Form**

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Event Name	Leeds Festival of Science Roadshows 2020 How do we use DNA? (Gel Electrophoresis)	Event organiser	Name(s): Natalie Duffield-Moore Faculty/Service: Educational Engagement Tel: 0113 3431062 Email: n.duffield-moore@leeds.ac.uk
Date (period) and time of Event	From 9 March 2020	Location/site/premises	Off campus – various schools
Description of Event	Outreach activity for school pupils, learning about the process of agarose gel electrophoresis and loading their own gel with pre-made dyes or markers.		



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Hazard type	How might the hazard cause harm?	Who may be harmed?	Control measures already in place	Is residual risk now acceptable ? (Yes/No)	If not acceptable , list additional control measures	Risk Rating (L x S)*	Action by whom
Electric Shock from visual presenter/ microphone/ screens 9if available in schools)	Electric Shock	Staff	School staff completed training around how to use equipment safely.	Yes		1 x 2 2	
Chemical Spillages	Skin and Eye Irritation	Staff & students	Wear protective gloves, clean body-covering clothing and goggles while handling. Overall supervision (from Education Outreach Fellows and school staff). COSHH form completed. Pupils do not move the gel tanks.	Yes		1 x 2 2	
Chemical Disposal	Skin and Eye Irritation	Staff	Wear protective gloves, clean body-covering clothing and goggles while handling Very small amounts used. Overall supervision (from Education Outreach Fellows and school staff). COSHH form completed. Staff and/ technicians to adequately dispose	Yes		1 x 2 2	



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			<p>of running buffer and gels as reported below:</p> <ul style="list-style-type: none"> - Running buffer (contains 50x Tris-Acetate EDTA) can be disposed of with household waste, according to MSDS, when Tris-Acetate EDTA is present in small quantities. In our case we have an overall amount of 120 mL, diluted in 5880 mL distilled water. This volume will be disposed of in the sink flushing with plenty of water. - Agarose gels (contains 50x Tris-Acetate EDTA) will be disposed of using the clinical waste route (yellow bags) 				
Trips and Falls	Bruising, Swelling, Broken Limbs, Bleeding	Staff & students	<p>Ensure compliance to general lab safety rules (e.g. no running) as set out in lab/ classroom briefing at start of session</p> <p>Keep lab/ classroom clear of obstructions/obstacles.</p> <p>Check lab/ classroom floor clean and clear from cables, and any other items.</p> <p>Monitoring behavior is the responsibility of</p>	Yes		1 x 3 3	

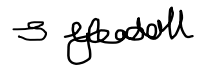


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			school staff.				
Cuts from broken/ contaminated glassware, e.g. pipettes.	Cuts, bleeding, burns	Staff & Students	Glass lab ware to be replaced with plastic. In cases where glass is used, glass to be collected by EoFs and/ school staff and put in glass bins EoFs/ school staff to carry out handling broken glassware.	Yes		1 x 2 2	
Cuts or injury from general lab apparatus and consumables- accidental harm (e.g. pipette tips, etc.	Cuts, bleeding	Staff & students	Glass lab ware to be replaced with plastic. In cases where glass is used, glass to be collected by EoFs/ school staff and put in glass bins EoFs/ school staff to carry out handling broken glassware.	Yes		1 x 3 3	
50-fold concentrated Tris-Acetate EDTA buffer (TAE), pH 7.8-8 <u>Contains:</u>	Can be harmful if swallowed or inhaled. Can causes irritation to skin, eyes and respiratory tract.	Staff & students	EoF and school staff supervision of students is required while using. Very small amounts used. Wear protective gloves and clean, body-covering clothing.	Yes		1 x 2 2	



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<ul style="list-style-type: none"> • 20 mM • Tris, 6 mM sodium • acetate, 1 mM disodium • ethylenediamine • tetraacetic acid 			Use chemical safety goggles when handling. In case of skin/eye contact: wash with plenty of water In case of spillage: remove any source of excessive heat and incompatibilities. Ventilate area of leak or spill. COSHH form completed.				
Event Organiser	Name: Natalie Duffield-Moore Signature: Natalie Duffield-Moore Position: Educational Engagement Lead Officer STEM Date: 10/03/2020		Approver of Risk Assessment <i>(refer to process map for level of approval required)</i>		Name: Steve Gleadall Signature:  Position: EE Manager Date: 10.03.2020		

*Refer to following tables for clarification.

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Author:	EM	Approved by:	GT	Version number:	1	Issue Date: November 2010



Risk Matrix

Severity Likelihood	Insignificant (1)	Minor (2)	Moderate (3)	Serious (4)	Critical (5)
Almost Certain (5)	Moderate (5)	Substantial (10)	Substantial (15)	Intolerable (20)	Intolerable (25)
Likely (4)	Tolerable (4)	Moderate (8)	Substantial (12)	Intolerable (16)	Intolerable (20)
Possible (3)	Tolerable (3)	Moderate (6)	Moderate (9)	Substantial (12)	Substantial (15)
Unlikely (2)	Tolerable (2)	Tolerable (4)	Moderate (6)	Moderate (8)	Substantial (10)
Rare (1)	Tolerable (1)	Tolerable (2)	Tolerable (3)	Tolerable (4)	Moderate (5)

Risk Rating	The level of risk for an activity is obtained by matching the likelihood of an accident occurring against the severity of the outcome if that accident occurred (i.e. likelihood multiplied by severity).
	General Risk Rating
Tolerable (1 to 4)	No additional controls are required. Consideration may be given to a more cost-effective solution or improvement that imposes no additional cost burden. Monitoring is required to ensure that controls are maintained.
Moderate 5 to 9	Efforts should be made to reduce the risk, but the costs of prevention should be carefully measured and limited. Risk reduction measures should be implemented within a defined time period. Where the moderate risk is associated with extremely harmful consequences, further assessment may be necessary to establish more precisely the likelihood of harm as a basis for determining the need for improved control measures.
Substantial 10 to 15	Work should not be started until the risk has been reduced. Considerable resources may have to be allocated to reduce the risk. Where the risk involves work in progress, urgent action should be taken. <u>Fire Risk Rating</u> If the building is unoccupied, it should not be occupied until the risk has been reduced. If the building is occupied then urgent action should be taken.
Intolerable 16 to 25	Work must not be started or continued until the risk has been reduced. If it is not possible to reduce the risk even with unlimited resources, work has to remain prohibited. <u>Fire Risk Rating</u> Building (or relevant area) should not be occupied until the risk is reduced.