



Work Activity:	Baylab Workshop - Heart Mechanics		
Persons at Risk:	Employees, students, visitors, and others in the vicinity	Risk Assessment ID:	GP-RA-21
Assessor:	Lucy Haywood	Issue Date:	08/2025
Consulted With:	Emma Schierbaum	Version Number:	V 3.0
Approved By:	Yvonne McCann	Review Date:	08/2027

Applicable To:	Bayer employees who work in Baylab, school/college students, teachers and people accompanying the students as helpers
Notes:	Age Group for the Heart Mechanics Workshop is 7 - 11 years of age

Comments and Relevant Documents:

This risk assessment covers the Baylab *Heart Mechanics* Workshop. This risk assessment must be read in conjunction with GP-RA-09 *Baylab and Inspiration Space at Green Park*, which covers the general operation, storage, and maintenance in Baylab as well as the running of practical sessions and experiments for visiting student groups.

Note: All Baylab operations at 400 South Oak Way are under the control of the Baylab Manager.

Supervision of student groups: See GP-RA-09 *Baylab and Inspiration Space at Green Park*.

Spillages: All spillages to be cleaned up immediately and hazardous waste disposed of through our specialist contractor in accordance with the local waste disposal arrangements. Suitable spill kits are provided for all potential spillages.

Personal Protective Equipment: Lab coats are supplied and should be worn during sessions in the Lab. PPE required for the various experiments and procedures have been specified and will be provided to the student groups as required. This might include lab coats, suitable gloves, and safety eyewear. Normal uniform or day wear should be worn as Lab coats will be provided.

Fire and First Aid: The actions to be taken in all foreseeable emergencies and incidents are laid down in our Health and Safety Manual and are available to view on request. The Baylab Manager is a trained first aider.

General: Good laboratory practice must always be followed. Long hair must be safely tied back; ties should be removed or tucked into shirt/lab coat before entry into Baylab. For general advice on health and safety see Health and Safety Executive web site: www.hse.gov.uk/

Note: In addition to this Risk Assessment, Bayer employees and contractors must read and understand all relevant sections within the Bayer Health and Safety Manual. This can be accessed via the Health and Safety SharePoint site.

Please contact the Health and Safety Team based in Reading for any further advice or assistance – our email address is GB-CP-HS@bayer.com

Hazard	Persons at Risk	Risk rating (FF x SF)	Controls and Safe Working Procedures	Additional Controls Recommended
General use of equipment	Baylab Team, student groups and any other people in vicinity	2 x 3 = 6	<p>Ensure sufficient working space around equipment for task</p> <p>Suitable selection of equipment and use restricted to intended purpose</p> <p>All equipment to be maintained in accordance with manufacturer's recommendations</p> <p>Ensure good housekeeping in area</p> <p>Faulty or defective equipment to be removed from use and repaired, recycled, or disposed of</p> <p>PAT testing regime in place and visual checks of all portable electrical equipment prior to use</p> <p>Use of any items of equipment to be demonstrated to students before operation</p> <p>Student use of equipment must be supervised at all times</p> <p>Access to Baylab area is restricted to authorised employees and visiting student groups only</p>	Where new equipment is introduced, a full induction must be provided before use. Training for equipment use by supervising adults is the responsibility of the Baylab Manager.
Slips, trips, and falls	Operator, student groups and others in vicinity	2 x 3 = 6	<p>Ensure good housekeeping in Baylab and Inspiration Space</p> <p>No running allowed in area</p> <p>Signage to be used if necessary to exclude others from designated areas</p> <p>Walkways must always be kept clear</p> <p>Wear suitable footwear</p> <p>Ensure adequate lighting of area</p> <p>All spillages to be cleared immediately</p> <p>Personal items such as bags and coats are stored in closed cupboards outside Baylab</p>	Ensure good cable management to prevent cables becoming a tripping hazard.

Hazard	Persons at Risk	Risk rating (FF x SF)	Controls and Safe Working Procedures	Additional Controls Recommended
Blood transport simulation and cardiovascular exercise session	Operator, student groups and others in vicinity	2 x 3 = 6	<p>Supervision of process by Baylab Manager, teaching staff and helpers and Baylab volunteers</p> <p>Working area to be checked prior to start to ensure no open cupboards, slip or trip hazards, maintenance work in progress, etc.</p> <p>All students will be fully briefed on the activity and warned that they must walk at all times – no running!</p> <p>Students must follow the strict one-way system</p> <p>Whistle to be used to control children with strict instruction to stop if whistle is blown</p> <p>Warning to be included on information to education establishment that this workshop does include some physical activities and that they must advise of any students with health or mobility problems prior to workshop</p>	
Use of microscope	Operator, student groups and others in vicinity	1 x 3 = 3	<p>Supervision of process by Baylab Manager or responsible adult</p> <p>Use of microscope to be demonstrated to students before operation</p> <p>Ensure sufficient working space around equipment for task</p> <p>All microscopes to be maintained in accordance with manufacturer's recommendations</p> <p>Ensure good housekeeping in area</p> <p>Microscope slides to be handled with care and disposed of in sharps bin if broken</p>	Microscope slides to be handled by supervising adults only.

Hazard	Persons at Risk	Risk rating (FF x SF)	Controls and Safe Working Procedures	Additional Controls Recommended
Use of stethoscopes	Operator, student groups and others in vicinity	3 x 2 = 6	Stethoscopes used to listen to each other's heartbeat and will need to be cleaned between each use with surgical wipes Students to be supervised and understand that the earpieces must be cleaned by an adult before each use	Students will be told not to talk, whistle, or blow into the microphone whilst the stethoscope is in ears.
Use of hand drums	Operator, student groups and others in vicinity	5 x 1 = 5	Small drums used to tap out heartbeat 10 in use at any one time Maximum exposure time 30 seconds Not very loud as drums are small with wooden stick	None
Use of glassware	Operator, student groups and others in vicinity	2 x 2 = 4	Students will be supervised to ensure glassware is handled correctly to prevent breakage Baylab Manager ensure all attendees are instructed not to touch any broken glass All breakages to be cleared up immediately and glass to be disposed of suitably	Note - Glassware may include beakers, capillary tubes, microscope slides, chromatography tanks and lids, glass bottles.
Exposure to potential allergens	Operator, student groups and others in vicinity	2 x 3 = 6	The chemicals, substances and natural items used in this workshop are: <ul style="list-style-type: none"> • Water • Oil • Salt • Food colouring • Glucose powder • A selection of sweets 	

Hazard	Persons at Risk	Risk rating (FF x SF)	Controls and Safe Working Procedures	Additional Controls Recommended
Installation and use of inflatable heart model	Operator, student groups and others in vicinity	3 x 2 = 6	<p>The inflatable heart model will be brought in by the supplier each time it is needed – RAMS provided and available on request</p> <p>Follow safe system of work to position and inflate the heart</p> <p>Students to be introduced to the activity in small groups with supervision</p> <p>Students and supervisors to be briefed on expected behaviour and safety prior to visiting the exhibit</p> <p>Inflatable heart will be located within the building Atrium which allows sufficient circulation space for students</p> <p>Inflatable heart is doubled-walled so deflation is slow and would not pose an entrapment/collapse hazard</p> <p>Inflatable heart is only used in an indoor space so no risk from wind or other weather conditions</p>	

Calculating the Risk Rating

Risks are assessed by rating the impact and the probability as low, medium, or high, given the controls that are in place, as shown below. The numbers are multiplied together to give a score; the higher the score the greater the requirement to address that risk.

Risk is a combination of two factors:

- The likelihood that an adverse event will occur – the *Frequency Factor*
- The severity of the consequences of the adverse event – the *Severity Factor*

To make an assessment:

- Assess the frequency with which an accident may occur and take the numerical value from the table below for *Frequency Factor*. This assessment should be based on available data, such as reported accidents, or on knowledge and experience of the assessor.
- Assess the severity of injury the hazard could cause and take the numerical value from the table below for *Severity Factor*.
- Multiply the Frequency Factor by the Severity Factor to obtain the Risk Rating.
- Consult the Threshold Values given below to decide whether further controls are required.

Risk rating (RR) = Frequency Factor (FF) x Severity Factor (SF)

Frequency Factor	Severity factor
1 = Improbable Occurrence (<1/ year)	0 = No identified effect
2 = Possible Occurrence (Once/ year)	1 = Trivial Injury (no lost time)
3 = Occasional Occurrence (>2/ year)	2 = Minor Injury (≤ 7 days absence)
4 = Frequent Occurrence (>1/ quarter)	3 = Major Injury to One Person (RIDDOR reportable)
5 = Regular Occurrence (>1/ month)	5 = Major Injury to Several People or Fatality

Risk Assessment Conclusion:

The controls identified are accepted as being suitable and sufficient to allow this task to proceed.

Risk Level Rating

Threshold Values for Risk Ratings

0 – 8	LOW LEVEL OF RISK	Acceptable risk within existing control measures
9 – 11	MODERATE LEVEL OF RISK	Put on hold and investigate further controls
12 +	HIGH RISK LEVEL OF RISK	Stop immediately and reassess process

Record of Reviews and Controls Identified:

Date of review:	2nd June 2023
Reviewed by (list all names Involved in review process):	Lucy Haywood and Lisa Mullan
Extra Controls Identified:	Corrective Action Taken and Completed Date:
Microscope slides are only to be handled by supervising adults due to age of student	
Students will be told not to talk, whistle, or blow into the microphone whilst the stethoscope is in ears	

Date of review:	27th August 2025
Reviewed by (list all names Involved in review process):	Lucy Haywood and Emma Schierbaum
Extra Controls Identified:	Corrective Action Taken and Completed Date:
No changes required	

Register of Changes Made:

Description of Change:	Date of Change:	Made by:
Initial risk assessment drawn up in conjunction with Emma Schierbaum	October 2019	L Haywood
Microscope slides only to be handled by adults	June 2023	L Haywood

Students will be told not to talk, whistle, or blow into the microphone whilst the stethoscope is in ears	June 2023	L Haywood
Added oil and salt to potential allergens	June 2023	L Mullan
2-yearly review – no changes or additions	27 th August 2025	L Haywood

END