#### National Space Centre - Risk Assessment Form

#### General Risk Assessment Reference – G398

| **Location** | National Space Centre |
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| **Equipment or Activity to be assessed** | Pressure Suit Artefact Handling and Marshmallow Syringe Demonstration |
| **Description of Activity** | Empty space suit inflated. Marshmallow is put into a syringe to demonstrate pressure. Hot water is put into a syringe at 70 – 80 degrees and when under pressure, will boil at a lower temperature. This is completed as a demonstration only for young children. For teenagers, this is completed under close supervision. |
| **Date of assessment** | 02/10/2024 |
| **Last review date (if applicable)** | 22/04/2024 |
| **Next review date** | October 2025 but earlier review date required following outcomes of accidents, absences and near misses, or changes to processes, work methods, materials, technology, equipment or legislation. |
| **Risk Assessment created by [name / date]** | Sophie Allan [02/10/2024] |
| **Authorised by Line Manager [name / date]** | Sophie Allan [02/10/2024] |
| **Authorised by Health and Safety Manager [name/ date]** | Katrina May Neve [02/10/2024] |

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| **What are the hazards?**  *Something with the potential to cause harm* | **Who might be harmed and how?** | **Control Measures**  *What is already in place to reduce the risk?* | **Additional Control Measures**  *What needs to be put in place to further reduce the risk?* | **Risk Rating**  *Refer to risk matrix below* | **Authorised by Health and Safety Manager** |
| Trip hazard | **Who**  Staff, members of the public  **How**  Cuts, bruises, strains, sprains | All wires and cables will be secured by tape or cable tidies.  Area around display table will be kept clear of objects on the floor and wide enough for the audience and the venue. |  | Likelihood: 2  Severity: 2  Risk Rating: 4  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Marshmallow syringe demonstration | **Who**  Staff, members of the public  **How**  Cuts, bruises | Explanation of how the experiment works beforehand by presenter on how to hold the syringe and operate the plunger to create a vacuum.  Presenter to warn people not to eat the marshmallows as they are used for multiple experiments. |  | Likelihood: 1  Severity: 2  Risk Rating: 2  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Hot water syringe demonstration | **Who**  Staff, students  **How**  Burns, scolds | Staff member to boil water using a kettle in advance of the demonstration, to allow it to cool to 70 – 80 degrees.  For young children – this is only completed as a demonstration.  For teenagers – this is completed under close supervision.  Staff fill the syringe.  Verbal warnings given. |  | Likelihood: 1  Severity: 2  Risk Rating: 2  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Pressure Suit handling | **Who**  Staff, students  **How**  Trapped fingers, cuts, bruises, exposure to latex | Avoid opening and closing the helmet visor when in use. General guidance to keep the visor up when students are wearing it.  If deemed safe, only the presenter opens and closes the visor, with verbal warnings given to keep fingers away.  Staff member / presenter to check for latex allergies before completing this part of the demonstration. |  | Likelihood: 2  Severity: 3  Risk Rating: 6  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |

**Risk Rating Matrix**

**Risk = Likelihood of injury x Severity of injury**

**R = L x S**

**Low risk = 1 – 6, Medium risk = 8 - 12, High risk = 15 - 25**

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|  | | **S = Severity of injury** | | | | |
| **Minor injury or illness (1)** | **First aid injury or illness (2)** | **3-day injury or illness (3)** | **Major injury or illness (4)** | **Fatality, disabling injury, etc (5)** |
| **L = Likelihood of injury** | Very unlikely (1) | 1 = Low | 2 = Low | 3 – Low | 4 = Low | 5 = Low |
| Unlikely (2) | 2 = Low | 4 = Low | 6 = Low | 8 = Medium | 10 = Medium |
| Likely (3) | 3 = Low | 6 = Low | 9 = Medium | 12 = Medium | 15 = High |
| **Very likely (4)** | 4 = Low | 8 = Medium | 12 = Medium | 16 = High | 20 = High |
| **Almost certain (5)** | 5 = Low | 10 = Medium | 15 = High | 20 = High | 25 = High |

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|  | **Risk Rating Definitions and Guidelines** |
| **Low** | **Minor to no injury.**  This is an acceptable level of risk. No further controls are required as the risk rating cannot be reduced any further. However, it is advised continual monitoring occurs to ensure that no changes/deviation of control measures occur. |
| **Medium** | **An injury requiring further medical assistance or is a RIDDOR related incident.**  It is advised that further control measures are implemented to reduce the risk rating to a low a level as possible. If the risk cannot be reduced to lower than a medium, then on-site monitoring should occur to ensure that all stipulated controls are bring adhered to. |
| **High** | **Death, paralysis, long term serious ill health.**  This is an unacceptable risk rating. Urgent interim controls should be implemented to reduce the risk so far as is reasonably practicable. If the risk rating cannot be reduced to lower than high, then a documented safe system of work should be implemented to control the activity. It may be necessary to seek further professional advice. Serious consideration should be given to the validity of carrying out the activity at all. Regular Monitoring of the activity should occur. |