#### National Space Centre - Risk Assessment Form

#### General Risk Assessment Reference – G394

| **Location** | National Space Centre |
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| **Equipment or Activity to be assessed** | Compressed Air Rocket Launcher |
| **Description of Activity** | The students create paper rockets with a point at the end, these are then connected to a hand bump / copper pipe assembly and a valve which allows high pressure to be created inside that assembly, which when released, will launch the rockets. Calculations are made to calculate the height of the rocket launch. |
| **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** |
| Injury from paper rockets in flight | **Who**  Participants, members of the public  **How**  Cuts, bruises | Participants will be warned of the unpredictable nature of the rockets in flight. Only those flying rockets should be in and around the flying area and remain behind the launcher until the rocket has been launched.  The demonstration will take place in an area that will be isolated away from members of the public.  Training and supervision provided by a responsible person during the workshop. |  | Likelihood: 1  Severity: 3  Risk Rating: 3  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Injury from using the hand operated air pump | **Who**  NSC Staff  **How**  Musculoskeletal injuries, strains, sprains | The hand operated pump will be always operated by a designated member of staff.  The amount of pressure to be used will be pre-determined at the start of the demonstration.  Staff to receive training in operating the pump.  Supervision of the audience will be provided by the responsible person presenting the workshop.  Visiting children should always be with their parents or guardian or groups should always be supervised by teachers or group members throughout the entire demonstration. |  | Likelihood: 1  Severity: 2  Risk Rating: 2  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Launching of the paper rocket in the cardboard box | **Who**  Participants, NSC staff  **How**  Headaches | Staff member to launch the rockets.  The velocity of the rocket means that there is a bang when it enters the cardboard box, but this does not exceed the recommended maximum noise level of 80dB/A  Before the launch of the rocket, the NSC Discovery staff member will ensure that the audience is fully briefed about the nature of the demonstration and will advise them that there is noise associated with the launch. |  | 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. |