Wonder Project

WHERE SCIENCE TECHNOLOGY ENGINEERING AND MATHS COME ALIVE.

Health and safety guidance

The Rocket Challenge

engineering new zealand

POWERED BY CallaghanInnovation
New Zealand's Innovation Agency

The Rocket Challenge

Risk assessment

Hazard	Risk	Likelihood	Management
General workshop hazards	The students could be harmed when they use the tools required to construct the rocket such as hot glue guns, scissors and other tools. This hazard could result in both minor and major consequences, ranging from small scratches to moderately serious burns and serious cuts.	Minor injuries possible. Low risk of major injuries	The students will be supervised by teachers and ambassadors. The supervisors will ensure, as far as is reasonably practicable, that the students are using the tools responsibly and safely.
Rocket explodes	If the rocket is pumped higher than 60 PSI, it could explode causing shrapnel to hit bystanders.	Highly unlikely to occur unless the rocket is over pumped. If the rocket is over-pumped, minor to moderate risk of explosion.	The students will be instructed that the rocket must not be pumped above 60 PSI. They will be shown a health and safety video which explains the risks of over-pumping the rocket and ensures they engage with health and safety rules. Safety glasses will be worn by participants at all times. The students will only use new 1.5L, PET plastic soda bottles. The bottles should be checked for damage prior to being used.
Launch pad placed close to surrounding structures	If the rocket is launched in an enclosed area or an area close to surrounding structures, it could cause damage to property.	If the rocket is launched in an enclosed area, high likelihood of damage.	The rocket should be launched in an open area at least 30 metres in width. The launch pad should be a safe distance away from surrounding structures such as buildings, trees and powerlines. The launch pad should be securely attached to stable ground.

Rocket fails to launch	Students approach the rocket to investigate or touch the rocket causing it to launch while they are not a safe distance away. The rocket could launch when the student approaches or touches it. This could result in serious injuries.	Low to moderate risk.	The students will be instructed never to stand over or touch the rocket while it is pressurised. This will be reinforced through a health and safety video. The students will work in teams so that they can look after each other and make sure everyone is following instructions. The students will also be supervised by ambassadors who will ensure, as far as is reasonably practicable, that the students follow instructions.
Bystanders close to launch site	Bystanders could be hit by the rocket or parts of the rocket if they stand too close.	Low risk if safe distances are observed. Moderate risk if bystanders stand too close.	Bystanders should be positioned far enough away from the launch pad that they are not at risk of being hit. The rocket should be angled away from bystanders and the launch pad secured to stable ground.
Slippery surfaces	Students could slip on surfaces which are covered in water from the rocket and injure themselves.	Low risk	The rockets should be launched from a grassy area or a surface which will not become overly slippery when wet.
Equipment not kept tidy	Students could trip over tangled wires or hoses.	Low to moderate risk	Any ropes, wires or hoses should be kept untangled and in clear view.

Incident procedures

Procedure to be followed in the case of any injury or near-miss incident.

Immediate response

1. Take steps to ensure the area is made safe and the other students are removed from the surrounding area if appropriate.
2. Ensure first aid treatment is given and arrangements are made for emergency or medical care where appropriate.
3. Notify the event manager of the nature of the incident and the extent of injury.

After the incident

1. Determine whether the injury is classified as a notifiable injury under the Health and Safety at Work Act 2015. A good indication that the incident is a notifiable injury is if the victim needs to be admitted to hospital or an ambulance called.
2. If the injury is a notifiable injury, you must notify WorkSafe as soon as practicable.
3. Notify Engineering New Zealand that an incident has occurred and whether that incident has been reported to WorkSafe.

A note on photography

Unless there is a prior arrangement, we ask that you do not take photographs of the students you are working with on your personal phone as we cannot ensure we meet our obligations under the Privacy Act to collect and store personal information securely. Personal information is considered as anything that can identify a person, even if they aren't named.