Wonder Project

WHERE SCIENCE TECHNOLOGY ENGINEERING AND MATHS COME ALIVE.

Health and safety guidance

The Power Challenge

engineering new zealand te ao rangahau

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The Power Challenge

Please take the time to read and understand this health and safety guidance document. We recommend that kaiako and ambassadors discuss any potential site risks and appropriate control measures before the challenge begins.

Risk assessment

Hazard	Risk	Likelihood	Management
Entering school carpark	Ākonga could be hit by cars driving in and around the school carpark.	Low risk of major injuries.	Identify appropriate driving controls when close to, entering and within a school carpark. This should include a reduction in speed, constantly checking your mirrors and scanning the carpark for ākonga and/or other hazards and limiting/eliminating distractions.
General workshop hazards	Ākonga could be harmed when using the tools required to construct the turbine 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.	Where possible, substitute tools that have more potential to be harmful (eg craft knives and hot glue guns) for safer alternatives (eg scissors and PVA glue). When using tools that could be considered harmful, ākonga should be supervised by kaiako and ambassadors. The supervisors will ensure, as far as is reasonably practicable, that ākonga are using the tools responsibly and safely. Kaiako should assess the ability of their ākonga to use tools safely and could consider the use of safety gloves as a precaution.
Coin cell batteries swallowed	Coin cell batteries are extremely dangerous if swallowed.	Low risk of major injuries.	Keep coin cell batteries in a secure container with a label, away from ākonga. Before the 'paper circuit' activity, the ambassador/kaiako should remind ākonga of the dangers of ingesting the

			batteries, and then distribute the batteries to each rōpū one by one. During the activity, monitor how each rōpū uses the battery, then collect the batteries after the activity is complete and store them away securely. Batteries should be replaced after 3 months.
Incorrect use of electrical equipment/electrical equipment in bad condition	Ākonga could experience an electrical shock from using electrical equipment incorrectly or equipment in a bad condition. Sparks from electrical equipment can serve as an ignition source.	If electrical equipment is misused, moderate to high risk of electrical shock. Low risk if electrical equipment is maintained and used in good condition.	Operating electrical equipment safely is part of the overall health and safety responsibilities in a classroom. Following these procedures will help meet the requirements of the **Health and Safety at Work Act 2015** and the **Electricity (Safety) Regulations**. Before any electrical equipment is used by ākonga, the kaiako/ambassador should ensure it is tested and checked for any signs of damage and that safety equipment is functioning correctly. Kaiako and ambassadors should ensure safe work practices are followed every time electrical equipment is used by discussing the importance of being safe around electricity with ākonga, and ensure, as far as is reasonably practicable, that ākonga are using the equipment responsibly and safely. When equipment is not in use, ensure it is unplugged and kept in a designated area of the classroom, away from ākonga.
Overloaded outlet	Plugging too many high amperage appliances into a single outlet via a multiplug or extension cord can cause outlets to overload. This could damage the electrical system in your classroom or even cause a fire.	Low to moderate risk.	Power boards (also known as multi-plugs, multi-boards or multi-boxes) should only be plugged into an electrical outlet to ensure a good supply of electricity and limit the potential for shocks or fires. Do not plug more than two appliances into one outlet at once.

			When testing, set up two separate testing stations with two separate outlets.
Hazardous material used for turbine blades	Ākonga could cut themselves on the rotating blades if they have sharp edges.	Low to moderate risk.	Kaiako to ensure that turbine blades aren't made with metal or any sharp-edged material.
Turbine blades not secured properly	Blades could detach from the turbine and hit ākonga if not secured properly.	Low risk if safe distances are observed. Moderate risk if bystanders stand too close.	Ask ākonga to stand in front or behind turbine to be safe while in use. Do not put anything, including hands, near the wind turbine or fan while it is rotating. Check that blades are securely attached to the hub with hot glue, or another reliable adhesive, before turning on the fan.
Equipment not kept tidy	Ākonga could trip over tangled wires.	Low to moderate risk.	Kaiako to set up a safe, tidy testing area in the classroom and clear this area of debris. Make sure all electric cords are tucked out of the way or taped to the floor to avoid ākonga tripping and falling over them.

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 other ākonga are removed from the surrounding area if appropriate. For example, disconnect any electrical equipment from power.
2. Ensure first aid treatment is given and arrangements are made for emergency or medical care where appropriate.
3. Notify the school's Health & Safety officer 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 ākonga 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.