

## Activity Overview

Students investigate aerodynamic forces through hands-on experimentation using vertical wind tunnels. Activities include reviewing forces (gravity, lift, air resistance), prototyping objects from various materials, testing performance in airflow, and reflecting on design iteration, workplace safety, and real-world applications.

## Hazard Identification & Risk Controls

Hazard	Risk	Risk Level	Control Measures
Vertical wind tunnel airflow	Loose objects becoming airborne	Medium	<ul style="list-style-type: none"> <li>• Only approved lightweight materials used</li> <li>• Objects tested one at a time</li> <li>• Clear instructions on safe placement and release</li> </ul>
Moving air and noise	Discomfort or distraction	Low	<ul style="list-style-type: none"> <li>• Short testing intervals</li> <li>• Clear verbal instructions before activation</li> </ul>
Materials and prototyping tools	Minor cuts or misuse	Low	<ul style="list-style-type: none"> <li>• Safe, age-appropriate materials only</li> <li>• Demonstration of correct use before activity</li> </ul>
Reaching into wind tunnel	Hand or finger injury	Medium	<ul style="list-style-type: none"> <li>• Students instructed never to place hands into active airflow</li> <li>• Tunnel operated only by staff or under direct supervision</li> </ul>
Trip hazards (materials, bags, equipment)	Slips or falls	Low	<ul style="list-style-type: none"> <li>• Clear workspaces and walkways maintained</li> <li>• Materials stored neatly between tests</li> </ul>
Behaviour during testing	Unsafe proximity to equipment	Medium	<ul style="list-style-type: none"> <li>• Clear expectations set at session start</li> <li>• Defined waiting zones for observing students</li> </ul>
Shared workspaces	Clutter leading to hazards	Low	<ul style="list-style-type: none"> <li>• Emphasis on clean-as-you-go practices</li> <li>• End-of-session workspace reset</li> </ul>

## Supervision and Training

### *Staff / Facilitators:*

- Sessions facilitated by trained Casey Tech School staff
- Visiting teachers retain responsibility for student behaviour
- First aid facilities available onsite

## Emergency Procedures

- Stop activity immediately if an incident occurs
- Provide first aid as required
- Notify school contact and complete incident documentation

### *Serious Injury or Emergency:*

1. Call emergency services (000 in Australia).
2. Administer first aid.
3. Document the incident.

## Equipment Safety & Maintenance

- Wind tunnel equipment checked prior to session
- Only approved materials used for testing
- Equipment operated according to staff instructions
- Materials collected and workspace cleaned at session end

## Review & Documentation

- After the session, staff to review and log any incidents, near misses, and feedback to improve future risk controls.
- Review risk assessment annually or after any incident.