

Activity Overview

Students apply design thinking to create and prototype a 3D product using Tinkercad software, progressing from sketching and digital modelling to 3D printing a small functional object (e.g. keychain). Activities include manual drawing, digital design, and supervised use of 3D printing equipment.

Hazard Identification & Risk Controls

Hazard	Risk	Risk Level	Control Measures
Use of computers and digital devices	Eye strain or posture discomfort	Low	<ul style="list-style-type: none"> Mix of screen-based and non-screen activities
Use of Tinkercad software	Cognitive overload or frustration	Low	<ul style="list-style-type: none"> Scaffolded tasks and facilitator support
3D printer operation	Burns from hot components or moving parts	Medium	<ul style="list-style-type: none"> 3D printers operated by staff or under close supervision only No student access to hot or moving parts Clearly defined exclusion zone
Electrical equipment	Electrical shock or equipment damage	Low	<ul style="list-style-type: none"> Equipment checked prior to session Students not to unplug or adjust equipment
Trip hazards (cables, furniture)	Slips, trips or falls	Low	<ul style="list-style-type: none"> Clear walkways maintained Cables secured and managed
Behaviour during practical activities	Misuse of equipment	Medium	<ul style="list-style-type: none"> Clear behaviour expectations set at session start Active supervision throughout the workshop

Supervision and Training

Staff / Facilitators:

- Sessions facilitated by trained Casey Tech School staff
- Visiting teachers retain responsibility for student behaviour
- Safety briefing provided prior to digital design and printing activities
- Students do not operate machinery independently
- 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

- All equipment must be checked before use.
- Faulty or damaged equipment must not be used.
- Regular cleaning procedures between users.

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.