Mechanics

Activity scope
This document relates to student participation in Mechanics as a curriculum activity. Mechanics refers to the monitoring, maintaining, fastening, locking, testing, adjusting and repairing of running internal combustion engines. Activities could include tear-down, tolerance checking, repairs, replacement of components, and sequential rebuilding and testing of internal combustion engines. Mechanics also refers to mechanical devices and systems that allow for transfer of power or give a mechanical advantage.

Minimum activity-specific qualifications for supervisors
- **For low risk activities:**
  - an adult with relevant qualifications and with a mechanical background, if a teacher as described is not available, or
  - For a registered teacher, a good working knowledge of tools and equipment for mechanics.
- **For medium risk activities:**
  - An adult with relevant qualifications and with a motor mechanic background, if a teacher as described is not available, or
  - For a registered teacher, experience (previous involvement) in the use of tools and equipment used in motor mechanics.

Minimum activity-specific equipment/facilities
- The location should have adequate ventilation and lighting. Through-ventilation or a mechanical ventilation system is essential when starting internal combustion engines in confined areas, as toxic gases are given off. Fumes from solvents and fuel may cause discomfort if inhaled.
- A fire extinguisher and/or fire blanket should be in close proximity to the fuel and oil usage area.
- Protective clothing, including gloves and/or goggles, may be necessary when using some fuels or solvents to prevent them being absorbed or reacting with the skin.

Activity-specific hazards/risks and suggested control measures
- Note that where the testing of equipment that may generate excessive fume levels is to be done on a temporary basis, temporary guards may need to be established to isolate the generating equipment in a safe zone.
- Ensure that correct tools are used when compressing springs and similar components.
- Ensure that any equipment that generates fumes is used only in a well-ventilated area so that fumes do not build up to hazardous levels.
- Ensure that internal combustion engines are switched off before refuelling.
- Ensure that all rotating parts are appropriately guarded.
- Note that working platforms should secure engines, motors and machines during dismantling or assembly.
- Start with simple maintenance-type activities and advance through hand and power tools to fixed operations, progressing from simple activities to more advanced projects.
- Instruct students in the dangers associated with transfer of fuel or oils in petrol-driven machines or engines.
- Ensure appropriate safe disposal processes for waste solvents and cleaning fluids.
- Ensure [hazardous substances guidelines](#) are adhered to.
• Adopt immediate and effective cleaning procedures to minimise potential hazards associated with fuel or oil spillage.
• Undertake a risk management process in order to prevent or minimise the risk of injuries caused by manual tasks.
• Instruct students in correct manual-handling techniques if a machine is to be moved.

Useful activity-specific links
• *Managing a Practical ITD Workspace — Curriculum Activity Risk Assessment Guidelines*