



Instructor Guide

Engine Safety

Topic Overview (why the topic is important to the students)

Vehicle engines are powerful machines with many moving parts. They have the potential to cause serious injury, so care and attention is required at all times. Students should not attempt to undertake any maintenance or repair work on a vehicle if they are tired, not feeling well, on medication, or otherwise impaired.

Demonstration and Discussion Topics

- **Discuss** engine hazards in the shop, including contact with moving parts, electric shock, burns, and carbon monoxide inhalation.
- **Show** the students an engine (turned off). Point out moving parts such as drive belts, pulleys, and the fan, that become hazards when the engine is running.
- **Point out** the ignition system. The normal battery voltage in passenger car and light truck electrical systems is only 12 volts and will not harm them; but the ignition system bumps the primary voltage up to 25,000 to 40,000 volts, which can cause a nasty shock if a spark plug wire, the ignition coil, or a distributor cap is touched while the engine is running.
- **Emphasize** the need to run engines only in well-ventilated areas because of the danger of carbon monoxide.
- **Distribute** the student handout.
- **Review** the safety tips.
- **Emphasize** that care and attention are important at all times, and that horseplay is never acceptable around vehicles.
- **Make it real.** Tell at least two true stories of engine-related injuries from your experience.
- **Discuss** the attitude that “it won’t happen to me”. Remind them that an injury can and will happen if they take shortcuts or are careless.
- **Instruct** the students to identify and report any safety concerns about engine hazards.
- **Answer** any questions or concerns they might have.
- **Set a good example** by working safely at all times.

Resources

- Heads Up
<http://www.bced.gov.bc.ca/irp/restdocs/headsup.pdf>