


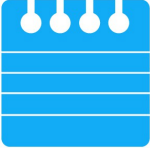







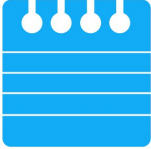



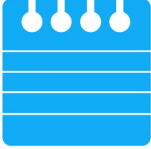
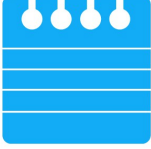
Automotive Maintenance and Light Repair, 1ST Edition














Chapter 6 SHOP SAFETY



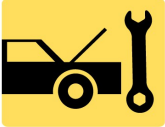






Opening Your Class











KEY ELEMENT	EXAMPLES
Introduce Content	This course or class covers Automotive Maintenance and Light Repair . It correlates material to task lists specified by ASE and NATEF.
Motivate Learners	Explain how the knowledge of how something works translates into the ability to use that knowledge to figure why the engine does not work correctly and how this saves diagnosis time, which translates into more money.
State the learning objectives for the chapter or course you are about to cover and explain this is what they should be able to do as a result of attending this session or class.	Explain the chapter learning objectives to the students. <ul style="list-style-type: none">• Identify situations where hearing protection should be worn.• Discuss how to safely handle tools and shop equipment.• Describe how to properly use a fire extinguisher.• Discuss shop safety procedures.
Establish the Mood or Climate	Provide a <i>WELCOME</i> , Avoid put downs and bad jokes.
Complete Essentials	Restrooms, breaks, registration, tests, etc.
Clarify and Establish Knowledge Base	Do a round robin of the class by going around the room and having each student give their backgrounds, years of experience, family, hobbies, career goals, or anything they want to share.

ICONS	Ch06 SHOP SAFETY
        	<p>1. SLIDE 1 CH6 SHOP SAFETY</p> <p>2. SLIDE 2 EXPLAIN OBJECTIVES</p> <p>Check for ADDITIONAL VIDEOS & ANIMATIONS @ http://www.jameshalderman.com/ WEB SITE REGULARLY UPDATED</p> <p>SAFETY IS NOT JUST A BUZZWORD ON A POSTER IN WORK AREA. Safe work habits can reduce accidents and injuries, ease workload, and keep employees pain free. Discuss all aspects of safety in automotive shop as you walk through slides.</p> <p>OPTION: SHOW PEARSON VIDEO "PERSONAL SAFETY" VIDEOS. VIDEO FOUND ON WWW.MYAUTOMOTIVELAB.COM 2 MINUTES LONG</p> <p><small>HTTP://MEDIA.PEARSONCMG.COM/PH/CHET/CHET_MYLABS/AKAMAI/TEMPLATE/VIDEO640X480.PHP?TITLE=PERSONAL%20SAFETY&CLIP=PANDC/CHET/2012/AUTOMOTIVE/AUTO_SHOP_SAFETY/CLIP4PERSSAFE1.MOV&CAPTION=CHET/CHET_MYLABS/AKAMAI/2012/AUTOMOTIVE/AUTO_SHOP_SAFETY/XML/CLIP4PERSSAFE1.XML</small></p> <p>RESEARCH INTERNET FOR OSHA: HAVE STUDENTS RESEARCH & REPORT ON HISTORY OF OSHA & WHAT THEY DO TODAY.</p> <p>GUEST SPEAKER: INVITE SERVICE TECHNICIAN TO DESCRIBE IMPORTANCE OF SAFETY IN SHOP</p> <p>3. SLIDE 3 EXPLAIN Personal Protective Equipment</p> <p>4. SLIDE 4 EXPLAIN FIGURE 6-1 Safety glasses should be worn at all times when working on or around any vehicle or servicing any component.</p> <p>5. SLIDE 5 EXPLAIN FIGURE 6-2 Steel-toed shoes are a worthwhile investment to help prevent foot injury due to falling objects. Even these well-worn shoes can protect the feet of this service technician</p> <p>6. SLIDE 6 EXPLAIN FIGURE 6-3 Protective gloves such as these vinyl gloves are available in several sizes. Select the size that allows gloves to fit snugly. Vinyl gloves last a long time and often can be worn all day to help protect your hands from dirt and possible hazardous materials</p> <p>HOLD DISCUSSION ON PPE ASK STUDENTS TO TALK ABOUT THE MAJOR TYPES OF PPE THEY SHOULD WEAR IN SHOP</p>

ICONS	Ch06 SHOP SAFETY
 	<p>Take care of your hands. Keep your hands clean by washing with soap and hot water that is at least 110°f (43°c).</p> <p>7. SLIDE 7 EXPLAIN Personal Protective Equipment</p> <p>8. SLIDE 8 EXPLAIN FIGURE 6-4 One version of a bump cap is this padded plastic insert that is worn inside a regular cloth cap</p> <p>9. SLIDE 9 EXPLAIN FIGURE 6-5 Remove all jewelry before performing service work on any vehicle.</p>
	<p>Explain that jewelry that may get caught on something or act as a conductor to an exposed electrical circuit. Avoid loose or dangling clothing.</p>
	<p>DISCUSSION ON LONG HAIR IN SHOP: ASK STUDENTS ABOUT SAFETY HAZARD OF HAVING LONG HAIR AND HOW TO DEAL WITH IT</p>
	<p>Also, ear protection should be worn if sound around you requires that you raise your voice (sound level higher than 90 decibels).</p>
	<p>Shop Cloth Disposal: Always dispose of oily shop cloths in an enclosed container to prevent fire. Oily shop cloths should be stored in a metal container equipped with a lid to help prevent spontaneous combustion. Whenever oily cloths are thrown together on floor or workbench, a chemical reaction can occur, which can ignite cloth even without an open flame. Process of ignition without an open flame called spontaneous combustion.</p>

ICONS	Ch06 SHOP SAFETY
	<p>10. SLIDE 10: EXPLAIN FIGURE 6-6 shows that you MUST always connect an exhaust hose to the tailpipe of engine of vehicle to be run inside building</p>
	<p>11. SLIDE 11: EXPLAIN FIGURE 6-7 explain magnetic tray is a helpful item to keep tools needed up where they can be easily reached without having to bend over saving time</p>
	<p>12. SLIDE 12: EXPLAIN FIGURE 6-8 An electric pusher used to push vehicles into or around the shop</p>
	<p>13. SLIDE 13: EXPLAIN FIGURE 6-9 All oily shop cloths should be stored in a metal container equipped with a lid to help prevent spontaneous combustion.</p>
	<p>DEMONSTRATE: HOOKING UP EXHAUST HOSE: DEMONSTRATE HOW TO CONNECT AN EXHAUST HOSE TO A VEHICLE. THEN HAVE YOUR STUDENTS PERFORM THIS TASK</p>
	<p>STUDENTS COMPLETE SHOP SAFETY CHECKLIST TASK SHEET</p>
	<p>14. SLIDE 14: EXPLAIN Cleaning Methods: elaborate on contents of SLIDES. Power Washing uses compressor to increase the pressure of water and force it out of a nozzle. The pressure of the water itself is usually enough to remove dirt, grease, and grime from vehicle components. Sometimes a chemical cleaner, such as a detergent, is added to the water to help with cleaning.</p>
	<p>15. SLIDE 15 EXPLAIN Electrical Cord Safety</p>
	<p>16. SLIDE 16 EXPLAIN Jump-Starting & Battery Safety</p>
	<p>17. SLIDE 17 EXPLAIN FIGURE 6-10 Jumper cable usage guide.</p>
	<p>18. SLIDE 18 EXPLAIN FIGURE 6-11 The air pressure going to the nozzle should be reduced to 30 PSI or less</p>
	<p>19. SLIDE 19 EXPLAIN FIRE EXTINGUISHERS</p>
	<p>20. SLIDE 20 EXPLAIN FIGURE 6-12 typical fire extinguisher designed to be used on type class A, B, or C fires.</p>
	<p>21. SLIDE 21 EXPLAIN FIGURE 6-13 CO2 fire extinguisher being used on a fire set in an open steel drum during a demonstration at a fire department training center</p>

ICONS	Ch06 SHOP SAFETY
  	<p>22. SLIDE 22 EXPLAIN: FIRE BLANKET</p> <p>23. SLIDE 23 EXPLAIN FIGURE 6-14 A treated wool blanket is kept in this easy-to-open wall-mounted holder and should be placed in a centralized location in the shop</p> <p>DEMONSTRATE FIRE EXTINGUISHER ALONG WITH LOCATION OF FIRE BLANKET</p> <p>HAVE STUDENTS COMPLETE <u>FIRE EXTINGUISHER TASK SHEET</u></p>
     	<p>24. SLIDE 24 EXPLAIN First Aid/Eye Wash Station</p> <p>25. SLIDE 25 EXPLAIN FIGURE 6-15 first aid box should be centrally located in the shop and kept stocked with the recommended supplies</p> <p>26. SLIDE 26 EXPLAIN FIGURE 6-16 A typical eye wash station. Often a thorough flushing of the eyes with water is the best treatment in the event of eye contamination</p> <p>SHOW ANIMATION ON EYE WASH STATION HTTP://MEDIA.PEARSONCMG.COM/PH/CHET/CHET_MYAUTOMOTIVELAB_2/ANIMATIONS/A1_ANIMATION/CHAPTER01_FIG_01_15/INDEX.HTM</p> <p>DEMONSTRATE USE OF EYE WASH STATION SHOW LOCATION OF FIRST AID & EYE WASH STATIONS. DEMO EYE WASH STATION</p> <p>27. SLIDE 27 EXPLAIN Evacuation Routes</p> <p>28. SLIDE 28 EXPLAIN FIGURE 6-17 area has been blocked off to help keep visitors from the dangerous work area.</p> <p>29. SLIDE 29 EXPLAIN FIGURE 6-18 properly marked aisle using yellow paint strips leading to an exit</p> <p>RESEARCH INTERNET FOR INFORMATION ON EQUIPPING A SHOP WITH THE PROPER TYPE OF FIRE EXTINGUISHERS.</p> <p>HOMEWORK: HAVE STUDENTS WRITE PREPARE LIST OF AT LEAST 10 AUTOMOTIVE SHOP SAFETY PROCEDURES.</p>

ICONS	Ch06 SHOP SAFETY
	<p><u>NATEF MLR TASK SUPP A1</u> IDENTIFY GENERAL SHOP SAFETY RULES AND PROCEDURES.</p>
	<p><u>NATEF MLR TASK SUPP A2</u> UTILIZE SAFE PROCEDURES FOR HANDLING OF TOOLS AND EQUIPMENT.</p>
	<p><u>NATEF MLR TASK SUPP A3</u> IDENTIFY AND USE PROPER PLACEMENT OF FLOOR JACKS AND JACK STANDS.</p>
	<p><u>NATEF MLR TASK SUPP A4</u> IDENTIFY AND USE PROPER PROCEDURES FOR SAFE LIFT OPERATION.</p>
	<p><u>NATEF MLR TASK SUPP A5</u> UTILIZE PROPER VENTILATION PROCEDURES FOR WORKING WITHIN THE LAB/SHOP AREA.</p>
	<p><u>NATEF MLR TASK SUPP A6</u> IDENTIFY MARKED SAFETY AREAS.</p>
	<p><u>NATEF MLR TASK SUPP A7</u> IDENTIFY LOCATION AND TYPES OF FIRE EXTINGUISHERS AND OTHER FIRE SAFETY EQUIPMENT; DEMONSTRATE KNOWLEDGE OF THE PROCEDURES FOR USING FIRE EXTINGUISHERS AND OTHER FIRE SAFETY EQUIPMENT.</p>
	<p><u>NATEF MLR TASK SUPP A8</u> IDENTIFY THE LOCATION AND USE OF EYE WASH STATIONS.</p>
	<p><u>NATEF MLR TASK SUPP A9</u> IDENTIFY THE LOCATION OF THE POSTED EVACUATION ROUTES.</p>
	<p><u>NATEF MLR TASK SUPP A10</u> COMPLY WITH THE REQUIRED USE OF SAFETY GLASSES, EAR PROTECTION, GLOVES, AND SHOES DURING LAB/SHOP ACTIVITIES.</p>

ICONS	Ch06 SHOP SAFETY
 	<p><u>NATEF MLR TASK SUPP A11</u> IDENTIFY AND WEAR APPROPRIATE CLOTHING FOR LAB/SHOP ACTIVITIES.</p>
 	<p><u>NATEF MLR TASK SUPP A12</u> SECURE HAIR AND JEWELRY FOR LAB/SHOP ACTIVITIES.</p>
 	<p><u>NATEF MLR TASK SUPP A13</u> DEMONSTRATE AWARENESS OF THE SAFETY ASPECTS OF SUPPLEMENTAL RESTRAINT SYSTEMS (SRS), ELECTRONIC BRAKE CONTROL SYSTEMS, AND HYBRID VEHICLE HIGH VOLTAGE CIRCUITS.</p>
 	<p><u>NATEF MLR TASK SUPP A14</u> DEMONSTRATE AWARENESS OF THE SAFETY ASPECTS OF HIGH VOLTAGE CIRCUITS (SUCH AS HIGH INTENSITY DISCHARGE (HID) LAMPS, IGNITION SYSTEMS, INJECTION SYSTEMS, ETC.).</p>
 	<p><u>NATEF MLR TASK SUPP A15</u> LOCATE AND DEMONSTRATE KNOWLEDGE OF MATERIAL SAFETY DATA SHEETS (MSDS).</p>