

Automotive Engines

Chapter 1 SHOP SAFETY

Opening Your Class

| KEY ELEMENT | EXAMPLES |
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| Introduce Content | This engine systems course or class provides complete coverage of the components, operation, design, and troubleshooting. It correlates material to task lists specified by ASE and NATEF and emphasizes a problem-solving approach. Chapter features include Tech Tips, Frequently Asked Questions, Real World Fixes, Videos, Animations, and NATEF Task Sheet references. |
| 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 as listed on the second SLIDE. <ol style="list-style-type: none"> 1. Identify situations where hearing protection should be worn. 2. Discuss how to safely handle tools and shop equipment. 3. Describe how to properly use a fire extinguisher. 4. Discuss shop safety procedures. |
| Establish the Mood or Climate | Provide a WELCOME , 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**



SLIDES marked HEADER in BLUE will be Lecture and/or Activity Points. They are also H1 Headers from text, that match Headings in Power Point slide & ATE4 Text.



Ch06 Safety in Shop

- 1. SLIDE 1 TITLE SLIDE
- 2. SLIDE 2 READ CHAPTER OBJECTIVES
- 3. SLIDE 3 EXPLAIN KEY TERMS

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.

Check for ADDITIONAL VIDEOS & ANIMATIONS @ <http://www.jameshalderman.com/>

WEB SITE REGULARLY UPDATED

OPTION: SHOW PEARSON VIDEO "PERSONAL SAFETY" VIDEOS. VIDEO FOUND ON WWW.MYAUTOMOTIVELAB.COM 2 MINUTES LONG

Safety Video 6.2

[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](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)












RESEARCH INTERNET FOR OSHA: HAVE STUDENTS RESEARCH & REPORT ON HISTORY OF OSHA & WHAT THEY DO TODAY.








GUEST SPEAKER: INVITE SERVICE TECHNICIAN TO DESCRIBE IMPORTANCE OF SAFETY IN SHOP











- 4. SLIDE 4 Personal Protective Equipment (PPE), DEMO & EXPLAIN each PPE item


HOLD DISCUSSION ON PPE ASK STUDENTS TO TALK ABOUT THE MAJOR TYPES OF PPE THEY SHOULD WEAR IN SHOP

- 5. SLIDE 5 EXPLAIN FIGURE 1–1 Safety glasses should be worn at all times when working on or around any vehicle or servicing any component
- 6. SLIDE 6 EXPLAIN FIGURE 1–2 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.

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|  | <p>7. SLIDE 7 EXPLAIN FIGURE 1–3 Protective gloves such as these vinyl gloves are available in several sizes. Select the size that allows the 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>8. SLIDE 8 EXPLAIN FIGURE 1–4 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 1–5 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. Take care of your hands. Keep your hands clean by washing with soap and hot water that is at least 110°F (43°C). Avoid loose or dangling clothing. Also, ear protection should be worn if sound around you requires that you raise your voice (sound level higher than 90 decibels).</p> |
|  | <p><u>DISCUSSION ON LONG HAIR IN SHOP: ASK STUDENTS ABOUT SAFETY HAZARD OF HAVING LONG HAIR AND HOW TO DEAL WITH IT</u></p> |
|  | <p>9. SLIDE 9 EXPLAIN TECH TIP</p> |
|  | <p>11. SLIDES 11-12 EXPLAIN SAFETY TIPS FOR TECHNICIANS</p> |
|  | <p><u>DEMONSTRATE: HOOKING UP EXHAUST HOSE: DEMONSTRATE HOW TO CONNECT AN EXHAUST HOSE TO A VEHICLE. THEN HAVE YOUR STUDENTS PERFORM THIS TASK</u></p> |
|  | <p>13. SLIDE 13 EXPLAIN FIGURE 1-6 shows that you MUST always connect an exhaust hose to the tailpipe of engine of vehicle to be run inside building.</p> |
|  | <p>14. SLIDE 14: EXPLAIN FIGURE 1-7 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>15. SLIDE 15: EXPLAIN FIGURE 1-8 An electric pusher used to push vehicles into or around the shop</p> |

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|        | <p>16. SLIDE 16 EXPLAIN SAFETY TIP:</p> <p>STUDENTS COMPLETE SHOP SAFETY CHECKLIST</p> <p>17. SLIDE 17 EXPLAIN FIGURE 1–9 All oily shop cloths should be stored in a metal container equipped with a lid to help prevent spontaneous combustion</p> <p>18. SLIDE 18 EXPLAIN TECH TIP</p> <p>19. SLIDE 19 EXPLAIN Cleaning Methods</p> <p>20. SLIDE 20 EXPLAIN electrical cord safety</p> <p>21. SLIDE 21 EXPLAIN FIGURE 1–10 Jumper cable usage guide along with SLIDE TEXT</p> <p>22. SLIDE 22 EXPLAIN SAFETY TIP</p> <p>23. SLIDE 23 EXPLAIN FIGURE 1–11 The air pressure going to the nozzle should be reduced to 30 PSI or less</p> <p>24. SLIDES 24-25 EXPLAIN SLIDE TEXT</p> <p>26. SLIDE 26 EXPLAIN FIGURE 1–12 A typical fire extinguisher designed to be used on type class A, B, or C fires</p> <p>27. SLIDE 27 EXPLAIN FIGURE 1–13 CO2 fire extinguisher being used on a fire set in an open steel drum during a demonstration at a fire department training center.</p> <p>28. SLIDE 28 EXPLAIN & DISCUSS SLIDE TEXT & FIGURE 1-4 treated wool blanket is kept in this easy-to-open wall-mounted holder & should be placed in a centralized location in shop ON USE OF FIRE BLANKET</p> |

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|           | <p><u>DEMONSTRATE FIRE EXTINGUISHER ALONG WITH LOCATION OF FIRE BLANKET</u></p> <p>HAVE STUDENTS COMPLETE <u>FIRE EXTINGUISHER TASK SHEET 2</u></p> <p><u>HANDS-ON TASK: USE VOCABULARY SCAVENGER HUNT TASK SHEET</u> to identify safety and personal protection equipment in the lab with letter on task sheet & describe purpose of each item.</p> <p><u>RESEARCH INTERNET FOR INFORMATION ON EQUIPPING A SHOP WITH THE PROPER TYPE OF FIRE EXTINGUISHERS.</u></p> <p>29. SLIDE 29 EXPLAIN FIRST AID/EYE WASH STATION & FIGURE 1–15 A first aid box should be centrally located in the shop and kept stocked with the recommended supplies</p> <p>30. SLIDE 30 EXPLAIN FIGURE 1–16 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><u>SHOW ANIMATION ON EYE WASH STATION EYEWASH STATION</u> HTTP://MEDIA.PEARSONCMG.COM/PH/CHET/CHET_MYAUTOMOTIVELAB_2/ANIMATIONS/A1_ANIMATION/CHAPTER01 FIG 01 15/INDEX.HTM</p> <p><u>DEMONSTRATE USE OF EYE WASH STATION SHOW LOCATION OF FIRST AID & EYE WASH STATIONS. DEMO EYE WASH STATION</u></p> <p>31. SLIDE 31 EXPLAIN TECH TIP</p> <p>32. SLIDE 32 EXPLAIN FIGURE 1–17 This area has been blocked off to help keep visitors from the dangerous work area.</p> <p><u>HOMEWORK (1 HOUR OUTSIDE WORK): HAVE STUDENTS WRITE PREPARE LIST OF AT LEAST 10 AUTOMOTIVE SHOP SAFETY PROCEDURES.</u></p> |

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|  | <p>HOMEWORK: CHAPTER 1 CROSSWORD PUZZLE: HTTP://WWW.JAMESHALDERMAN.COM/LINKS/BOOK ENGINE THEORY SERV 7/CW/CROSSWORD CH 1.PD F</p> |