

Automotive Technology 6th Edition

Chapter 16 Vehicle Identification & Emission Ratings

Opening Your Class

KEY ELEMENT	EXAMPLES
Introduce Content	This Automotive Technology 6th text provides complete coverage of automotive components, operation, design, and troubleshooting. It correlates material to task lists specified by ASE and ASEEducation (NATEF) and emphasizes a problem-solving approach. Chapter features include Tech Tips, Frequently Asked Questions, Case Studies, Videos, Animations, and ASEEducation (NATEF) Task Sheets.
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: <ol style="list-style-type: none"> 1. Discuss the parts of a vehicle, and differentiate between front-wheel drive and rear-wheel drive. 2. Explain vehicle identification, vehicle safety certification label, and the VECI label. 3. Discuss emission standards in the United States. 4. Explain calibration codes and casting numbers
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.

NOTE: This lesson plan is based on the 6th Edition Chapter Images found on Jim's web site @

www.jameshalderman.com

DOWNLOAD Chapter 16 Chapter Images: From

<http://www.jameshalderman.com/>

[automotive_principles.html](#)NOTE: You can use Chapter Images or possibly Power Point files:

ICONS

Ch16 Vehicle ID & Emission Ratings



1. SLIDE 1 TITLE: VEHICLE IDENTIFICATION & EMISSION RATINGS



Check for **ADDITIONAL VIDEOS & ANIMATIONS**
@ <http://www.jameshalderman.com/>
WEB SITE IS CONSTANTLY UPDATED



[http://www.jameshalderman.com/
automotive_principles.html](http://www.jameshalderman.com/automotive_principles.html)

DOWNLOAD

Crossword Puzzle (Microsoft Word) (PDF)

Word Search Puzzle (Microsoft Word) (PDF)



DISCUSSION: HAVE STUDENTS TALK ABOUT WHY, FOR AUTOMOTIVE SERVICING & AND REPAIR PURPOSES, PARTS OF A VEHICLE ARE IDENTIFIED IN TERMS OF LEFT & RIGHT SIDE OR FRONT AND REAR RATHER THAN BY DRIVER OR PASSENGER SIDE.



ON-VEHICLE TASK: HAVE STUDENTS USE MASKING TAPE TO LABEL THE LEFT AND RIGHT PARTS OF A CAR OR TRUCK



Common acronyms: FWD for Front Wheel Drive, RWD: Rear Wheel Drive, 4WD for Four-Wheel Drive, & AWD:All Wheel Drive.



DISCUSSION: ASK STUDENTS TO DISCUSS DIFFERENCES BETWEEN FRONT-WHEEL, REAR-WHEEL, ALL-WHEEL, AND FOUR WHEEL DRIVE SYSTEMS. WHAT ARE ADVANTAGES & DISADVANTAGES OF EACH? STUDENTS WILL PREPARE A CHART SHOWING THE DIFFERENCES IN THE BELOW ON-VEHICLE TASK.

ICONS

Ch16 Vehicle ID & Emission Ratings



ON-VEHICLE TASK: HAVE STUDENTS DO A CHART IN CLASS ON DIFFERENCES BETWEEN DRIVE SYSTEMS



2. SLIDE 2 **EXPLAIN** Figure 16-1 vehicle identification number (VIN) is visible through the base of the windshield and on a decal inside the driver's door.



DEMONSTRATION: SHOW STUDENTS AN EXAMPLE OF A VEHICLE IDENTIFICATION NUMBER (VIN) AND HAVE STUDENTS DECIPHER ITS MEANING BASED ON INFORMATION PROVIDED ON PAGE 126 OF ATE4 CHAPTER 16



3. SLIDE 3 **EXPLAIN** FIGURE 16-2 A typical VIN showing the information that is represented..



EXPLAIN TECH TIP: Use a VIN decoder Perform a search for "VIN decoder" and many will be found, including the free one posted on the National Highway Traffic Safety Administration website (www.nhtsa.gov). A VIN decoder is useful to find what equipment and accessories the vehicle has.



Before 1980, there was no universally accepted equivalent to a VIN, so OEMs used their own formats.



HAVE STUDENTS COMPLETE VIN TASK SHEET (PAGE 24). STUDENTS DECIPHER VIN ON A LAB OR PERSONAL VEHICLE



HOMEWORK RESEARCH THE HISTORY OF VIN. USING COMPETING STANDARDS FOR VEHICLE IDENTIFICATION BEFORE 1980 AND WHY VIN STANDARD BECAME NECESSARY.

ICONS Ch16 Vehicle ID & Emission Ratings



DEMONSTRATE: EXAMPLE OF VEHICLE SAFETY CERTIFICATION LABEL. ASK THEM TO DECIPHER INFORMATION PROVIDED ON LABEL AND EXPLAIN WHAT IT SIGNIFIES.



4. SLIDE 4 **EXPLAIN** Figure 16-3 VECI label on a 2008 Ford



DEMONSTRATE: LOCATION OF VEHICLE EMISSIONS CONTROL INFORMATION (VECI) LABEL UNDER HOOD OF VEHICLE



ASK STUDENTS TO DISCUSS IMPORTANCE OF INFORMATION PROVIDED ON VECI LABEL



HAVE STUDENTS COMPLETE VECI TASK SHEET








California Air Resources Board, or CARB, enforces some of world's strictest Air Pollution Standards. Indian Tribes call the LA area the Valley of Smoke



HAVE STUDENTS RESEARCH PROBLEMS OF EMISSIONS IN CALIFORNIA, USING TERMS PHOTOCHEMICAL SMOG AND LOS ANGELOS VALLEY OF SMOKE EMISSIONS



HOST DISCUSSION ON WHY CALIFORNIA EMISSION STANDARDS & RESULTS OF INTERNET RESEARCH

<p style="text-align: center;">ICONS</p>	<p style="text-align: center;">Ch16 Vehicle ID & Emission Ratings</p>
<div style="display: flex; flex-direction: column; align-items: center;">    </div>	<p>5. SLIDE 5 EXPLAIN FIGURE 16-4 This vehicle emission control information (VECI) decal indicates this vehicle meets both national EPA Tier 2, Bin 5 (T2B5) and California (ULEV II) emission standards.</p> <p>6. SLIDE 6 EXPLAIN Figure 16-5 typical computer calibration sticker on case of controller. The information on sticker is often needed when ordering parts or a replacement controller.</p> <p>7. SLIDE 7 EXPLAIN Figure 16-6 Engine block identification number cast into the block is used for identification.</p> <p>ANIMATIONS <u>Complete Work Order Estimate (View) (Download)</u> <u>Complete Work Order Technician Copy (View) (Download)</u> <u>Complete Work Order Total Cost (View) (Download)</u> <u>Work Order Customer Copy (View) (Download)</u></p> <p>http://www.youtube.com/watch?v=gTGpkbt8fm4 Writing effective repair orders</p>
<div style="display: flex; align-items: center;">   Education Foundation </div>	<p style="text-align: center;">COMPLETE <u>A1A1 ASE EDUCATION</u> TASK SHEET ON RO COMPLETION</p>