

Automotive Technology 5th Edition

Chapter 16 Vehicle Identification & Emission Ratings

Opening Your Class

KEY ELEMENT	EXAMPLES
Introduce Content	This Automotive Technology 5 th text provides complete coverage of automotive 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: <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 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.

NOTE: This lesson plan is based on the 5th Edition Chapter Images found on Jim's web site @ www.jameshalderman.com

LINK CHP 16: [ATE5 Chapter Images](#)

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

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.

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

2. SLIDE 2 READ & EXPLAIN Figure 16-1 Typical vehicle identification number (VIN) as viewed through the windshield.

ICONS	Ch16 Vehicle ID & Emission Ratings
	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
	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
	<u>HOMework</u> RESEARCH THE HISTORY OF VIN. USING COMPETING STANDARDS FOR VEHICLE IDENTIFICATION BEFORE 1980 AND WHY VIN STANDARD BECAME NECESSARY.
	<u>DEMONSTRATE:</u> EXAMPLE OF VEHICLE SAFETY CERTIFICATION LABEL. ASK THEM TO DECIPHER INFORMATION PROVIDED ON LABEL AND EXPLAIN WHAT IT SIGNIFIES.
	3. SLIDE 3 READ & EXPLAIN Figure 16-2 VECI label on a 2008 Ford
	<u>DEMONSTRATE:</u> LOCATION OF VEHICLE EMISSIONS CONTROL INFORMATION (VECI) LABEL UNDER HOOD OF VEHICLE
	ASK STUDENTS TO <u>DISCUSS</u> IMPORTANCE OF INFORMATION PROVIDED ON VECI LABEL
	HAVE STUDENTS <u>COMPLETE VECI TASK SHEET</u> (PAGE 29).
	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

ICONS



Ch16 Vehicle ID & Emission Ratings

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

3. SLIDE 3 READ & EXPLAIN Figure 16-4 typical computer calibration sticker on case of controller. The information on sticker is often needed when ordering parts or a replacement controller.
4. SLIDE 4 READ & EXPLAIN Figure 16-5 Engine block identification number cast into the block is used for identification.

ANIMATIONS

[Complete Work Order Estimate \(View\) \(Download\)](#)

[Complete Work Order Technician Copy \(View\) \(Download\)](#)

[Complete Work Order Total Cost \(View\) \(Download\)](#)

[Work Order Customer Copy \(View\) \(Download\)](#)

<http://www.youtube.com/watch?v=gTGpkbt8fm4>

Writing effective repair orders

COMPLETE **A1A1** TASK SHEET 3 ON RO COMPLETION

HOMEWORK

[Crossword Puzzle \(Microsoft Word\) \(PDF\)](#)

[Word Search Puzzle \(Microsoft Word\) \(PDF\)](#)