



# #10448 DRIVER'S EDUCATION: PART 12--BASIC CAR REPAIR

DEAF SUCCESS PRODUCTIONS, 2004  
GRADE LEVEL: 9-12  
30 MINUTES

## DESCRIPTION

An ASL narrator shares some safety tips related to simple automotive problems. Suggests emergency items to keep in the vehicle, and then demonstrates how to do some basic car repairs. Shows checking and adding oil, jump starting a dead battery, changing a tire, and more. Voiced in English.

## ACADEMIC STANDARDS

### Subject Area: Technology

- Standard: Knows the characteristics and uses of computer hardware and operating systems.
  - Benchmark: Knows features and uses of current and emerging technology related to computing (e.g., optical character recognition, sound processing, cable TV, cellular phones, ABS brakes).

### Subject Area: Life Work

- Standard: Makes effective use of basic tools.
  - Benchmark: Learns the proper use of new instruments by following instructions in a manual or by taking instructions from an experienced user.

### Subject Area: Self-Regulation

- Standard: Considers risks.
  - Benchmark: Knows potential safety hazards, and knows common strategies to avoid hazard or injury.

## INSTRUCTIONAL GOALS

1. To explain the basic car repair.
2. To identify the emergency equipment necessary for a vehicle.
3. To illustrate the basic maintenance actions:
  - a. Checking your car's oil.
  - b. Jumpstarting a dead battery.
  - c. Replacing a flat tire.
  - d. Checking your tire pressure.
  - e. Adding gas (if you run out).

## BEFORE SHOWING

Automotive maintenance is something most of us ignore, until our vehicle stops functioning, that is. And then we wonder what went wrong, where. Auto maintenance is one of the most serious aspects of

## C a p t i o n e d M e d i a P r o g r a m

ownership. It determines the longevity, performance, and reliability of whichever vehicle you drive. Looking after your vehicle involves more than taking care of its external coat of paint and keeping it clean and shiny.

Car maintenance means taking care of all the parts, including the engine. These are the ones that directly concern the performance of your vehicle. Besides taking it to the service station at regular periods, it is a good idea to go through the owner's manual that will give a fair idea about its routine maintenance.

Checking the battery, keeping a check on the oils, changing the oils, and checking the electrical system, are some of the absolutely unavoidable things to keep your vehicle in good shape. Keeping a log book in which you keep all the details regarding auto maintenance, routine check-ups, etc., will help you plan what needs to be done when.

### AFTER SHOWING

#### Discussion Items and Questions

1. Discuss why it is important to learn basic car repair.
2. List the basic maintenance maneuvers:
  - a. Checking your car's oil.
  - b. Jumpstarting a dead battery.
  - c. Replacing a flat tire.
  - d. Checking your tire pressure.
  - e. Adding gas if you run out.
3. Identify the emergency equipment to keep in your vehicle:
  - a. Road atlas.
  - b. Nickels, dimes, and quarters.
  - c. Water bottles.
  - d. Flashlight.
  - e. Pressure gauge.
  - f. Screwdrivers.
  - g. Wrench and socket set.
  - h. Pliers.
  - i. Utility knife.
  - j. Motor oil.
  - k. Empty gas container.
  - l. Jack lift.
  - m. Spare tire.
  - n. Battery jumper cables.
  - o. Small fire extinguisher.
  - p. First-aid kit.
  - q. Road flares or reflective warning triangles.
  - r. Windshield washer fluid.
  - s. Ice scraper.

#### Applications and Activities

Have students research and provide in-depth reports on these routine maintenance procedures: oil changes, tune-ups, winterizing, tires, and washes.

#### Background

*Oil Changes.* When an oil change is performed on your car, the old, often sludgy oil is drained from the engine, the oil filter is replaced, and fresh, clean oil is added. Some people will advise you to change your oil every 3,000 miles, which, unless you have an aversion to adding a quart of oil from time to time, is mostly unnecessary. Most cars are down a quart of oil at 3,000 miles. If you replace the quart yourself and keep an eye on the oil level, you'll be able to safely go another 2,000 miles or so. If not, get it changed. Once an engine is down a quart, the oil begins to burn off at an increasingly rapid pace. Let it go too long and your engine will seize (the friction generated in an insufficiently oiled engine causes the pistons to expand, freezing the engine and rendering it totally useless), and will have to be replaced entirely.

## C a p t i o n e d M e d i a P r o g r a m

Factors such as dirt, dust, excessive heat or cold, and city driving (i.e., short distances, short stops, and inconsistent accelerations) will all expedite the burning of oil and should be considered when setting your routine. Even under the harshest conditions, you won't need to change your oil at intervals of less than 3,000 miles; under the kindest conditions, never go longer than 7,500.

Consult your owners' manual to determine which viscosity grade (i.e., 10W-30, 10W-40, etc.) of oil you should use.

*Tune-Ups.* A tune-up, also known as major service, should be performed every 30,000 miles or so, and generally involves the following:

- Replace the fuel filter.
- Replace the air filter.
- Change the spark plugs.
- Check the fan belts, replace if worn.
- Check the fluids (i.e., transmission fluid, oil, wiper fluid, coolant, etc.), and replace/refill if necessary.
- Replace the positive crankcase ventilation valve, which, if clogged, will cause your car to stall.
- Check the battery, add water if necessary; clean cables and terminals.

At 50,000 miles, you should perform the above steps (or have them performed), plus check the brakes and tires, and begin checking for rust. At 100,000 miles, perform all of the above, escalating the search for rust, check the alignment, and have a mechanic check the engine's compression and hoses.

*Winterizing.* When winter hits, you'll want to "winterize" your car, which involves the following:

- Replace the coolant.
- Replace your wipers, and make sure you have enough wiper fluid.
- Check the battery.
- Check the lights, heater, and defrosters.
- Check the brakes.
- Keep a scraper and other emergency supplies, such as flares, blankets, and tools, in the car.
- Don't let the gas tank fall below 1/4 full, to prevent moisture from freezing in the gas lines.
- Keep an eye on your tires. If they're bald, replace them, and if they're underinflated, give them some air. The ideal tire pressure should be specified on the tire itself.

*Tires.* Keep an eye out for uneven wear, leaks, and tread depth. Underinflated tires wear faster and more unevenly, wreaking havoc on things like alignment and gas mileage. The treads on a healthy tire should be more than 1/16 of an inch deep. A good test is to place a penny into the tread, and if at least part of Lincoln's head is obscured, the tire is fine.

*Washes.* Salt, sand, and other various chemicals used on the roads during the winter season will devour your car if given the chance. Wash the car regularly to preempt any corrosion, and take the car to a car wash to have the undercarriage washed. Though many cars come with finishes that resist rust and corrosion, their undercarriages are still especially vulnerable to the elements, and are too often overlooked by their owners. Remember you can repaint the body of the car, but you can't replace the undercarriage.

### RELATED RESOURCES

#### Captioned Media Program

- [Citizens' Guide to Safe Driving #7914](#)
- [Driver's Education: Part 3—Introduction to Control Devices #10452](#)

## C a p t i o n e d M e d i a P r o g r a m

- [\*Driver's Education: Part 11—Basic Vehicle Anatomy #10447\*](#)
- [\*Driver's Education: Part 13—Vehicle Emergencies #10449\*](#)
- [\*Vehicle Safety: Be Prepared #10433\*](#)

To view more titles in the *Driver's Education* series and other related media, please connect to our Web site at <http://www.cfv.org/browsetitles.asp?sn=98>.

### World Wide Web



The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and “kid safe” sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

---

- **MAINTENANCE BASICS**

<http://www.csa.com/global/articleindexsubcat/0,1395,1004010300,00.html>

Get advice about how to care for your car from the experts at AAA. Covers everything from tune-ups to tire treads.

---

- **MAINTENANCE TIPS**

[http://www.gm.com/automotive/parts\\_for\\_consumers/service\\_support/maintenance.htm](http://www.gm.com/automotive/parts_for_consumers/service_support/maintenance.htm)

Designed to give you a general idea of where key maintenance areas are located on most cars.

---

- **AUTO MAINTENANCE**

<http://auto.indiamart.com/auto-maintenance/>

See the list of links. Each topic gives you a general idea of key maintenance areas. Emphasizes the importance of keeping a log book for recording maintenance and repair.

---

- **VEHICLE EMERGENCY SUPPLIES**

<http://users.snowcrest.net/wb6fzh/tcevepak.html>

A suggested minimum list of emergency supplies for your vehicle.