Car Care & Basic Maintenance

For Teens

Avoid Trouble, But Be Prepared

- Keep Your Vehicle in Good Condition
- Inspect it Before Each Trip
- Keep Your Cell Phone Charged
- Carry Emergency and First Aid Equipment

Maintain Your Car

- Walk Around Before Each Trip
- Perform Scheduled Maintenance
- Monthly Inspections

The Basics

- Tires
- Oil
- Lights
- Gas
- Fluids
- Cleanliness

Tires

Tires

Check tire pressure and re-inflate once a month. Under-inflation is a leading cause for tire failures. In cold weather, tires can lose up to two pounds of air per month. Maintaining the proper inflation is very simple as long as tires are checked regularly using a pressure gauge.

Tire Pressure (PSI)

Tread Depth Gauge

Gas

Keep the tank filled … and with the right gas. Make sure to check the gas gauge before driving around town and fill-up if up often.

Oil

The type of engine oil, the age and make of your vehicle and driving habits dictate when to change engine oil.

Always refer to the owners manual

Oil Cap

Coolant

An overheated engine can suddenly stop at an inconvenient time and place. It's frustrating when this happens, especially since it's a scenario that can easily be avoided.

Lights

Drivers use the car lights to communicate with fellow drivers, so driving with faulty or broken lights can lead to a serious crash.

Instrument Panel

The instrument panel helpfully displays warning lights when something is working improperly or running low. These lights will inform drivers when the oil needs to be changed, the engine needs to be checked, etc. You can refer to the owner's manual for the correct response for every warning light

Car Cleanliness

A regular car wash will make a vehicle cleaner and safer. A dirty windshield can get in the way of driving especially in conditions with less-than-ideal visibility e.g. rain or fog weather conditions. Even a driver with perfect vision will have a harder time navigating with a dirty windshield.

Wiper Fluid

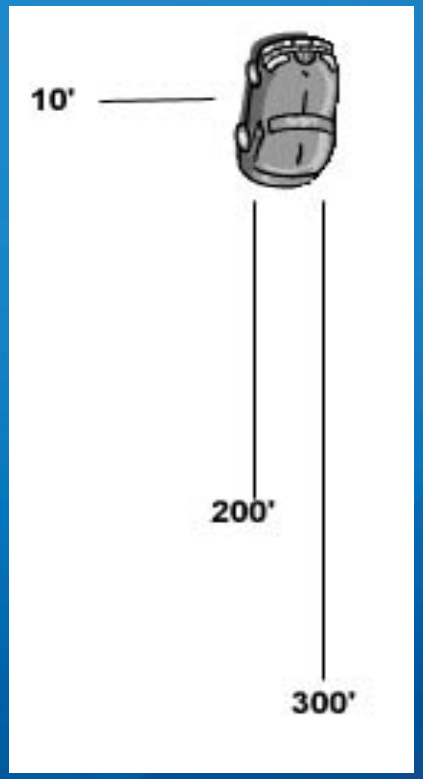
Emergency Equipment

If Your Car Breaks Down While Driving

- Don’t Panic
- Use brakes gradually … if needed
- Get to the Shoulder !!
- Signal & coast to shoulder (right shoulder preferred)
- Beware of roadside hazards (trees, ditches)
- Stop as far off the roadway as safely possible

Safely on the Shoulder

- Emergency Flashers On
- Communicate Your Situation
- Raise Hood
- Warning Triangles (3)
- Location (mile markers or exits)
- Assess the Vehicle's Problem
- Call For Help
- Wait in the car (if safely on shoulder)



1-800-AAA-HELP

Car Care & Basic Maintenance

AAA Northeast

REVIEW

- Review the ***Car Care and Basic Maintenance*** PowerPoint presentation. Make sure to read the Notes section on each slide.
- Review the following handouts:
    - Useful Items to Keep in Your Vehicle
    - Vehicle Maintenance Checklist
    - Work Zone Safety Awareness
    - What to Do If Your Vehicle Breaks Down

WATCH

Watch the following video:

- **Tested: How Much Tread Depth Do You Need?**

ANSWER

Play the ***Jeopardy!***™ games in the accompanying PowerPoint. Make sure the presentation is in “slide show” mode.

Work Zone Safety Awareness Fact Sheet

- As states and the federal government focus on rebuilding and refurbishing the highway system in the post-interstate era, increased work zones mean more risk of crashes and deaths (approximately 600 people die nationally in work zones each year).
- The most common type of car crash is the rear-end collision, so leave plenty of space between you and the car in front of you (the 3 – 4 second following distance rule would be best).

REGULATIONS

Work area is defined in the Vehicle and Traffic Law (Section 160) as "That part of the highway being used or occupied for the conduct of highway work, within which workers, vehicles, equipment, materials, supplies, excavations or other obstructions are present."

A **flagger** has the same authority as a regulatory sign.

Enforcement of traffic laws is maintained 24 hours a day. Traffic enforcement is enhanced because of all the potential risks and dangers.

REDUCE SPEED

- Speeding ticket fines are doubled.
- Speed limits are enforced even when no work is underway.
- A mandatory 60-day license suspension when an individual is convicted of two or more speeding violations in posted highway construction or highway maintenance work area.
- The establishment of a highway construction and maintenance safety education program funded by a new $50 surcharge for speeding violations occurring in work zones.

STRATEGIES

- **Stay calm** and expect the unexpected.
- **Slow down** as soon as diamond-shaped orange warning signs tell you and keep speed down until you have passed the sign that states end of the work zone.
- **Merge as soon as possible** before signs when you see flashing arrow panels or "lane closed ahead" signs. Drivers slow to reduce speed and/or merging react at the last possible moment.
- **Leave space** for slow moving construction vehicles, such as mobile line painting or pothole crews.
- **Plan an alternate route** it you already know of a work zone.
- **Be attentive**, since large construction or maintenance vehicles along the roadside could obstruct your vision.

HAZARDS

- Lack of shoulder and/or median areas that usually serve as safety valve areas.
- Lane merges or changing patterns.
- Barrels and cones reducing lane width.
- Drivers not using common sense.
- Highway workers standing and working near traffic.
- Aggressive drivers disregarding restrictions.

What to Do if Your Vehicle Breaks Down

- Park as far off the traveled portion of the highway as possible, while still remaining in sight of the road.
- Turn on the four-way emergency flashers (hazard lights).
- Do not exit your vehicle unless you are well off the traveled portion of the road and can safely do so.
- To draw attention, open the vehicle's hood and leave it open.
- Stay in your vehicle until police arrive – especially at night or in inclement weather.
- If a motorist stops and tries to be helpful, partially open your window and ask the person to call police for assistance.
- If you must leave your vehicle, write down and leave in your car the following information: your name, the date and time you left, the direction you were going and what you were wearing.
- If you do accept a ride from a passing motorist, be sure to leave a written note in your vehicle containing the following information: your name, the date and time you left, the direction you were going and what you were wearing. The message should also contain the name of the motorist who is assisting you, as well as that individual's license plate and a description of his or her vehicle.
- If you must leave your disabled vehicle on the highway, be sure to call the police to explain what happened and give them the location of your car.

Vehicle Maintenance Checklist

DRIVER INSPECTIONS can be done routinely by vehicle owners:

Item	When to Check	What to Check
Headlights	Weekly	Dirt, burnt-out bulb, alignment
Other lights *(brake/signal)*	Weekly	Burnt-out bulbs, dirt
Windows	Daily	Pits, scratches, dirt, cracks
Tires	Monthly	Air pressure, cuts, tread wear, alignment (don't forget the spare if you have one!)
Brakes	Daily	Pedal pressure, travel smooth/straight
Steering	Daily	Wheel play, stiffness in steering
Suspension	After winter; difficult to control before and after winter (detailed)	Excessive bouncing, swaying, leaning
Exhaust	Daily	Noise, fumes, leaks
Wipers	Monthly	Wiper blades, washer fluid
Under the Hood	Weekly/Monthly/ Yearly	Engine oil, fluids (automatic transmission, power steering, brake, engine coolant), battery connection, belts, hoses, air filter

SCHEDULED INSPECTIONS* should be performed by a service facility:

Item	When to Check	What to Check
Engine tune-up	Annually	Spark plugs, spark plug wires, air filter, fuel filter, PCV valve, fuel injection, drive belts, hoses, exhaust system
Cooling system	Every two years	Hoses, drive belts, coolant, radiator leaks, water pump, heater core, pressure test, thermostat
Engine oil	Refer to owner's manual	Filter, leaks, suspension, lubrication, differential oil, suspension system
Automatic Transmission	Every 18,000-24,000 miles	Fluid level, fluid condition, gear slippage
Brakes	Twice a year	Brake pad/shoe wear, fluid level, rotor/drum wear
Air Conditioning System	Annually	Freon level, leaks and vents

**Maintenance intervals may vary with different vehicle makes and models. For information on your specific vehicle, consult the owner's manual.*

Visit AAA.com/Safety for more information and tips.

Useful Items to Keep in Your Vehicle

EMERGENCY KITS are available at most AAA Travel stores, automotive and large discount retailers, as well as online retailers. Here are some items that should either be in your kit or can supplement your kit:

- Charged cell phone
- Flashlight with extra batteries
- First-aid kit (including vinyl or latex gloves)
- Three reflective warning triangles, collapsible cones or warning flares
- Reflective vest
- Jack, lug wrench, flat board (to be placed under jack on soft road shoulders), and a wheel chock
- Jumper cables or jump pack
- Small tools – flat and Phillips head screwdriver, pliers and wrench
- Pencil and notebook
- Empty gas can (never carry gas in the car)
- Paper towels and glass cleaner
- Fire extinguisher
- Rain poncho and extra change of clothes
- LifeHammer®/window punch tool (keep in glove compartment)
- Bottled water/non-perishable foods
- Extra medication for emergencies

Especially in winter, include the following:

- Ice scraper/snow brush
- Small shovel
- Small bag of abrasive materials – sand, salt, non-clumping kitty litter
- Blanket
- Warm clothes, gloves, boots
- Windshield de-icer
- Lock de-icer (Store this outside of your vehicle – it won't do any good if you can't get to it!)

Keep These Items Handy to Maintain Your Vehicle:

- Tire pressure gauge
- Air compressor
- Windshield-washer fluid
- Gallon of antifreeze (premixed 50/50 water and coolant specified for your vehicle)
- Quart of oil

Visit TeenDriving.AAA.com for more information and tips.

TOPIC: Car Care and Basic Maintenance
GRADES: 9 - 12
STANDARD(S): Driver Education

OBJECTIVES FOR DRIVER EDUCATION

- Understand the importance of proper vehicle maintenance to reduce the risk of breakdowns.

PROCEDURE

- Assign students to review **Car Care and Basic Maintenance** PowerPoint presentation (including the Notes section).
- Assign students to watch **Tested: How Much Tread Depth Do You Need?** *(Tire Rack)* video. Students will learn the importance of maintaining tire tread and how it relates to safety.
- Assign students to review four informational handouts:
  - Useful Items to Keep in Your Vehicle
  - Vehicle Maintenance Checklist
  - Work Zone Safety Awareness
  - What to Do If Your Vehicle Breaks Down
- Assign students the **Jeopardy!**™ review game *(make sure PowerPoint is in "Slide Show" mode to play game).*

OPTIONAL ACTIVITIES

- Have students find the recommended pressure on the placard located on the door jamb.
- Using a quarter, have students check the tire tread on all four tires.
- Have students peruse the vehicle's owner's manual to get a better understanding of how the vehicle operates.
- With a parent's help, have students pop the hood and identify location of fluid containers (oil, coolant, windshield washer).
- Have students perform a walk-around the vehicle to conduct a visual inspection and check that all lights are operational (headlights, parking lights, brake lights, turn signals, hazard lights)

SUMMARY

Part of being a safe driver is ensuring the vehicle is "road ready." As a driver, it is vitally important to perform regular maintenance on the vehicle, which will highly reduce the risk of serious problems occurring in the future, as well as improve the driving quality of the vehicle.

EDUCATION STANDARDS

The lesson plan meets the following state standards:

NEW YORK

Technology Education, Standard 5, Tools, Resources and Technological Process

Key idea: Technological tools, materials, and other resources should be selected on the basis of safety, cost, availability, appropriateness, and environmental impact; technological processes change energy, information, and material resources into more useful forms.

- Select appropriate tools, instruments, and equipment and use them correctly to process materials, energy, and information
- Explain tradeoffs made in selecting alternative resources in terms of safety, cost, properties, availability, ease of processing, and disposability

NEW JERSEY

9.3 – Career & Technical Education (CTE) Content Area: 21st Century Life and Careers

POWER, STRUCTURAL & TECHNICAL SYSTEMS (AG-PST)

9.3.12.AG-PST.2 Operate and maintain AFNR mechanical equipment and power systems. 9.3.12.AG-PST.3 Service and repair AFNR mechanical equipment and power systems.

CONNECTICUT

PST.01. CCTC Framework: Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural and technical systems.

PST.01.02. Performance Indicator: Apply physical science and engineering principles to design, implement and improve safe and efficient mechanical systems in AFNR situations.

PST.01.02.03.a. Examine owner's manuals to classify the types of safety hazards associated with different mechanical systems used in AFNR (e.g., caution, warning, danger, etc.).

PST.01.02.03.b. Select, maintain and demonstrate the proper use of tools, machines and equipment used in different AFNR related mechanical systems.

PST.01.02.03.c. Conduct a safety inspection of tools, machines and equipment used in different AFNR related mechanical systems.

RHODE ISLAND

CTE Program Industry Specific Standards

4. Identify problems, often by using computerized diagnostic equipment

5. Plan work procedures, using charts, technical manuals, and experience

8. Perform basic care and maintenance, including changing oil, checking fluid levels, and rotating tires