



**TRAIL
LIFE
USA**

Vehicle Care

Name _____

Automobiles are an important part of life today. For some people they are simply a way to get from one place to another. For others, owning and caring for a car is a fun hobby. Either way, in order to depend on a vehicle you should understand:

- How it works and how to take care of it
- Regulations affecting the ownership and upkeep of your vehicle

Do all of the following requirements (1-5)

____1. Point out each of the following devices and systems in each category (if present) on an automobile or using a diagram of an automobile and describe or demonstrate how each is used used:

- ____a. Lighting: headlights, interior lights, dashboard indicators, turn signals, brake lights, and tail lights
- ____b. Drive Train: gas pedal, engine, transmission, universal joint, axles, and wheels
- ____c. Stopping: brakes, brake pedal, rear brake lights, transmission for either neutral or downshifting
- ____d. Turning: signals, mirrors, and steering wheel
- ____e. Safety: automatic braking system, back-up camera, radar, seatbelts
- ____f. Engine Compartment: engine block, carburetor/throttle body, battery, spark plug, radiator, fan and belts, thermostat, oil dipstick, oil filter, brake fluid dipstick, power steering fluid, and washer fluid reservoir.

____2. Either take an auto maintenance class offered by your school or community that covers the following material or do the following under appropriate adult supervision:

- _____a. Demonstrate how to check and add the following fluids in your family car: brake, windshield wiper, oil, gas, transmission, radiator, and power steering.
 - _____b. List the different types of fuel available for modern cars and which are used in your family car(s).
 - _____c. Describe the meaning of the different octane ratings for gasoline and if applicable, list which is best to use in your family car(s).
 - _____d. Demonstrate how to calculate the gas mileage for your family car(s).
 - _____e. List the recommended tire pressure(s) for your family car(s).
 - _____f. Demonstrate checking tire pressure on a car or truck.
 - _____g. Demonstrate changing a tire.
- _____3. Research items that should be included in a breakdown or emergency car kit. **With your parent's help, prepare or replenish such a kit for your family vehicle.**
- _____4. Develop a vehicle inspection checklist. Under appropriate adult supervision, complete a vehicle inspection using the checklist once a week for a month.
- _____5. Each state passes laws and sets policies regarding the use and operation of motor vehicles. To educate the public and enforce these policies, each state has an agency to: **test drivers, inspect vehicles, issue driver's licenses, track driving records, register vehicles, and issue license plates.** Research your **state's agency and driving laws and do the following:**
- _____a. **List the requirements for getting a driver's license in your state including the steps, training, cost and testing associated with receiving your license. Describe the details of your state's graduated driver's license program.**
 - _____b. Describe the violations that could cause you to lose your driving privileges.

- _____c. Describe what is covered by collision, liability, and comprehensive automobile insurance.
- _____d. List factors considered in setting automobile insurance rates.
- _____e. List the regulations in your state regarding: vehicle registration, license plates, automobile insurance and proof of insurance.
- _____f. Describe the process of any state and local required vehicle inspections including how often, what is inspected or tested, and who is authorized to inspect (local mechanic, state-operated facility, etc.).

Do two of the following optional requirements (6-12)

- _____6. Some people enjoy fixing up and driving older model cars. Many people get **together with other classic car enthusiasts to enjoy each other's work. Attend a classic car show.**
 - _____a. While at the show, follow car show etiquette including: no touching the cars, no leaning on the cars, do not let your belt or other items touch a car, be respectful of the vehicles you see, and no running around the cars.
 - _____b. Interview one of the car owners about their classic car and report to your Mentor what you learned about the car.
- _____7. Explain why it is important to keep your vehicle clean and do the following:
 - _____a. Demonstrate how to properly wash and dry the exterior of a car.
 - _____b. Demonstrate how to properly clean the inside of a car, including the carpet/floor, seats, mats, windows and dash.
 - _____c. List some good tips for getting the vehicle clean and reducing water spots.
- _____8. Different types of vehicles have advantages and disadvantages. List the key advantages and disadvantages of each of these vehicle design types: SUVs, Convertibles, Light duty trucks (pickups), Vans/Mini-Vans, Sports cars, and Hybrids.

- _____9. Annually, many cities host a new model year car show to educate the public about changes to manufacturer’s offerings. Attend such a car show and obtain promotional brochures from at least three manufacturers, or take photos of at least three manufacturer’s vehicles. Discuss how the new models have changed since the prior model was introduced and note whether the change(s) were cosmetic (appearance only), safety related, or performance related.
- _____10. Research the history of the automobile.
- _____a. List who invented the automobile; when it was invented; and where was it invented.
 - _____b. Explain how the invention of the automobile changed the world.
 - _____c. List at least five career opportunities in the automotive field.
- _____11. Define the following terms and explain how they relate to cars: torque, combustion, viscosity, and horsepower.
- _____12. Design your ideal car concept using drawings and include: fuel type, number of seats, color and style, and safety features.

Trail Badge Mentor Signature

Date

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