

Cars in Your Classroom

Vocabulary

Acceleration: The measure of how much the velocity of an object changes over a period of time.

Aerodynamic: Designed with rounded edges to reduce wind drag. An aerodynamic vehicle will have increased fuel efficiency.

Air: a mixture of nitrogen, oxygen, and minute amounts of other gases that surrounds the earth and forms its atmosphere.

Air filter: Collects and traps dirt, as air is drawn in through it, before it can enter the engine.

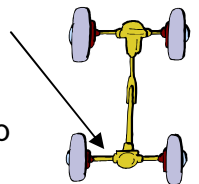


Alternator: An electrical generator that turns mechanical energy into electrical energy for powering circuits in a vehicle. With the engine running, the alternator recharges the battery. The alternator provides as well all the electrical power needed to run the headlights, radio, air conditioner etc.



Automobile: a passenger vehicle designed for use on ordinary roads and typically having four wheels and a gasoline or diesel internal-combustion engine. "Auto" means "self", "mobile" means "moving."

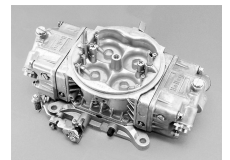
Axle: the pin, bar, shaft, or the like, on which or by means of which a wheel or pair of wheels rotates.



Battery: Supplies the initial electrical power that starts the engine. It is made up of two lead plates plus a mixture of acid and water. This combination creates electricity that triggers the starter motor.

Car: a motor vehicle with four wheels; usually propelled by an internal combustion engine

Carburetor: The carburetor mixes air and fuel in the proper ratio for burning in the engine's combustion chambers. Most new cars now have fuel injected engines. Older vehicles have carburetors.



Characteristics: a feature that helps to identify or describe an object.

Classify: to organize objects based on similar or differing characteristics

Combustion: the act or process of burning



Crankshaft: A series of offset levers that connect to the pistons through connecting rods. As the pistons move up and down they turn the crankshaft, which turns the combustion into torque to drive the car.



Cylinder: (in an engine) a long rounded tube in which the pressure of a gas or liquid moves a sliding piston. The pistons move up and down inside the cylinder.

Dichotomous key: a process used for the identification of organisms based on a series of choices between differing characteristics

Distance: the amount of space between two points

Distributor: Distributes high voltage electricity to the spark plugs, one at a time.



Energy: A source of usable power, such as petroleum or coal; usable heat or power; the capacity of a physical system to do work. Living systems (plants and animals) also need energy to function; ability of a system to do work.

Engine: A machine that turns energy into mechanical force or motion.

Explosion: the burning of the mixture of fuel and air in an internal-combustion engine

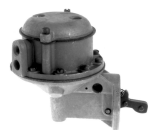
Force: push or pull that gives energy to an object, causing it to start moving, stop moving, or change its motion; a force is that can cause an object with mass to accelerate.

Friction: A force that is trying to stop the motion of an object; the resistance encountered when one body is moved in contact with another; surface resistance to relative motion; observed when an object sliding or rolling



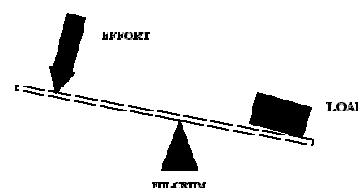
Fuel: Something consumed to produce energy. For example, a material such as wood, coal, gas, or oil burned to produce heat or power. Animals use food as fuel. Plants use energy from the sun to complete their energy process.

Fuel pump: An electrical or mechanical pump that delivers fuel from the tank to the carburetor or injection system.

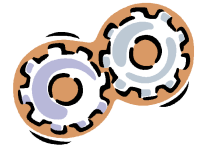


Fuel injection system: Sprays controlled amount of fuel directly into either the intake manifold or combustion chambers, resulting in a very precise air to fuel ratio that improves fuel economy.

Fulcrum: fixed point at which a lever pivots



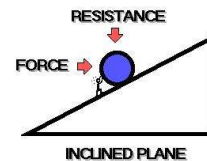
Gasoline: A volatile (evaporates easily) mixture of flammable liquid hydrocarbons that mostly comes from crude petroleum and used as a fuel for internal-combustion engines.



Gear: a toothed wheel that developed from the wheel and lever

Gravity: The force of attraction between all masses in the universe; especially the attraction of the earth's mass for bodies near its surface; the natural force of attraction exerted by a celestial body, such as Earth, upon objects at or near its surface, tending to draw them toward the center of the body.

Inclined plane: slanted surface used to raise an object



Inertia: tendency of objects to remain in motion or stay at rest unless acted upon by an unbalanced force

Ignition: The slot in which you place the key. "To ignite" means to light or start. When you turn the key, the ignition sends an electrical signal to the battery to send out electricity.

Internal combustion: the combustion of fuel inside a cylinder

Kinetic energy: the energy that a moving object has due to its motion; energy of motion

Kinetic friction: Friction that resists motion of an object that's already in motion.

Lever: A bar that is free to pivot, or move about, a fixed point when an effort force is applied.

Load: Something taken up and carried.



Load distance: The distance the load is moved.

Machine: a device for overcoming resistance at one point by applying force at some other point

Mass: the amount of something there is (amount of matter in an object).

Mechanical: caused by or derived from machinery

Metastability: the quality of a physical system that persists in its existing equilibrium when undisturbed (or only slightly disturbed) but able to pass to a more stable equilibrium when sufficiently disturbed.



Motion: Change in the relative position of the parts of anything; action of a machine with respect to the relative movement of its parts; the act or process of moving from one place to another.

Muffler: A device in the exhaust system with the purpose of lowering the sound level of the engine.



Oil: refined or crude petroleum; motor oil is used to lubricate an internal combustion engine.

Oxygen: An element, normally a gas, which makes up about one-fifth of the atmosphere of the Earth. All life needs oxygen to survive. An engine needs air (which includes oxygen) to mix with gas and a spark to create the explosions that run the engine.

Petroleum: A thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface.

Piston: a disc or cylindrical part that fits tightly and moves within a cylinder, either to compress or move a fluid collected in the cylinder (i.e. air, gas, water) or to transform energy from a fluid entering or expanding inside the cylinder (i.e. compressed air, explosive gases, or steam); Car engines can have 4, 6 or 8 pistons connected to the crankshaft.



Potential energy: energy stored in an object due to its position.

Power: The energy or motive force by which a physical system or machine is operated

Pulley: A small wheel with a grooved rim used with a rope or chain to change the direction of a pulling force and in combination to increase the force applied for lifting



Radiator: The device that helps to remove heat from the cooling system as coolant passes through it.

Simple machine: tools that make work easier; any of various elementary devices considered as the elements of which all machines are composed and including the lever, the wheel and axle, the pulley, the inclined plane, the wedge, and the screw.



Spark plug: a device designed to fit in each cylinder of a gasoline-powered internal-combustion engine and to produce the electric spark for igniting the mixture of gasoline and air.



Speed: The rate or a measure of the rate of motion; distance traveled divided by the time of travel; how fast an object moves.

Speedometer: An instrument for indicating the rate of speed of a vehicle

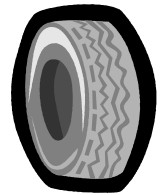


Static friction: Friction on an object that resists making it move.

Streamlined: having a contour designed to offer the least possible resistance to a current of air, water, etc.; optimally shaped for motion or conductivity

Tachometer: an instrument measuring revolutions per minute, such as in an engine

Tire: a ring or band of rubber placed over the rim of a wheel to provide traction and resistance to wear



Torque: A measurement of force.

Transmission: An automotive assembly of gears and associated parts by which power is transmitted from the engine to a driving axle. Also called a *gearbox*.

Transportation: the act of moving something from one location to another; an object that moves something from one place to another

Vehicle: something that transports people or objects from one place to another

Velocity: The speed of the object moving in a specific direction.

Weight: response of mass to the pull of gravity

Wheel: a simple machine consisting of a circular frame with spokes (or a solid disc) that can rotate on a shaft or axle (as in vehicles or other machines)

Wheel and axle: a simple machine consisting of a grooved wheel turned by a cord or chain with a firmly attached axle (as for winding up a weight) together with supports

Work: the product of a force applied to an object and the displacement of the object in the direction of the applied force; product of a force applied to an object and the distance through which the force is applied; force times distance



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