

HOW DO TYPICAL 20TH CENTURY VEHICLES WORK?

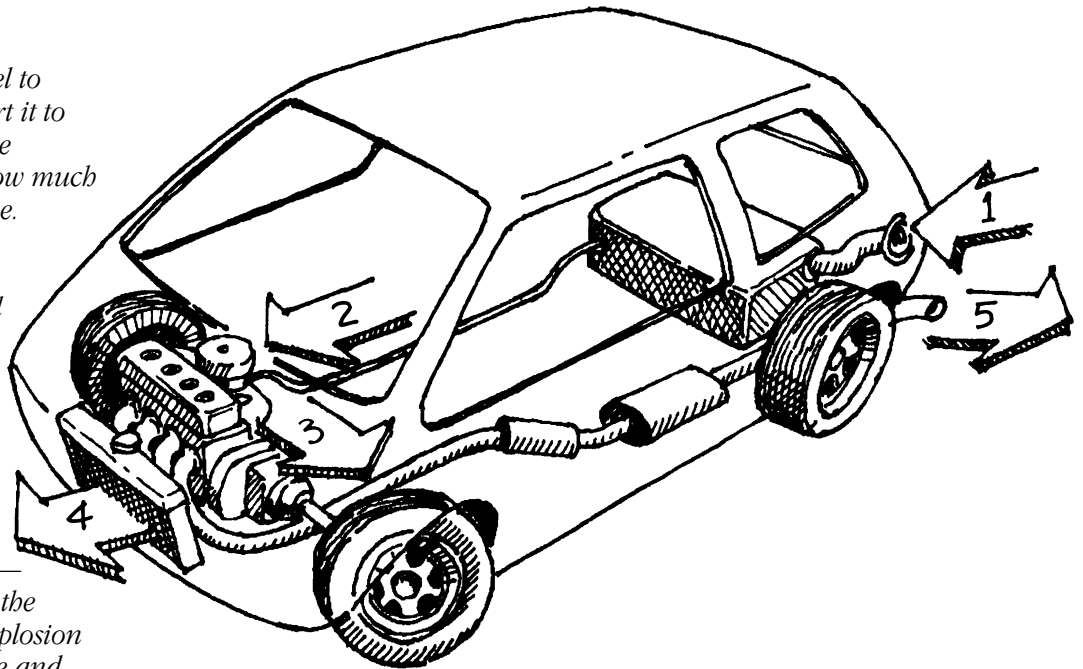
1. FUEL TANK—holds gasoline or diesel

2. ENGINE—burns fuel to create heat and convert it to mechanical energy. The accelerator controls how much fuel is sent to the engine.

3. TRANSMISSION—carries the mechanical energy to the wheels

4. RADIATOR—carries away waste heat and keeps the engine cool

5. EXHAUST SYSTEM—has a muffler to soften the noise created by the explosion of the fuel in the engine and a tailpipe to carry away the exhaust from the occupants



OTHER VOCABULARY YOU MAY ENCOUNTER

ACCELERATION

Process of speeding up

CETANE RATING

A number that rates the starting ability of diesel fuel; the diesel equivalent to a gasoline octane rating

CRUISE SPEED

Efficient operating speed

ENERGY CONTENT OR HEATING VALUE

The amount of heat generated during combustion in a vehicle's engine. A high value is desirable because it means that less fuel must be stored on board.

FLAMMABILITY LIMITS

The range of temperature in which a fuel can be ignited and burns. For safety reasons, narrow limits are preferable.

FLASH POINT

The lowest temperature at which vapors above a volatile combustible substance ignite when exposed to flame. High flash points are preferable.

FUEL DENSITY

A measure of the weight of a fuel per volume. Along with energy content, it determines the storage volume and weight of the fuel. This in turn affects the vehicle's operating range. The more fuel a vehicle can carry, the greater its range.

LUBRICITY

Ability to reduce friction

OCTANE

A hydrocarbon, which contains eight carbon atoms, found in petroleum

OCTANE RATING

A measure of a fuel's ability to resist catching on fire when compressed in an engine. Because engines knock loudly when their fuel-air mixtures ignite too early (that is, before the spark plug fires), octane ratings, which measure antiknock properties, are also called "antiknock" ratings. The higher the octane number, the more resistant the fuel is to catching on fire when compressed.

PAYLOAD

A vehicle's ability to carry something. It may be affected by the size and weight of the fuel tank in the vehicle.

RANGE

The distance a car can travel on a charged battery or tank of fuel