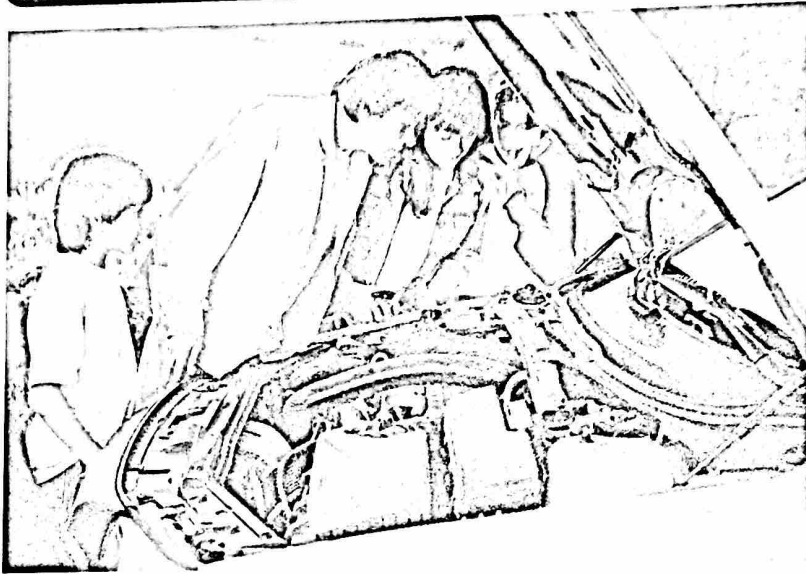


How Does a Car Engine Work?

Talk about the diagram and read the explanation.

Explanation Writing



The car, the most popular kind of **transport** in the world, is a road **vehicle** with four wheels and an engine. An engine is a machine which converts energy into mechanical power or movement. Most cars have engines that are powered by **petrol** or gasoline.

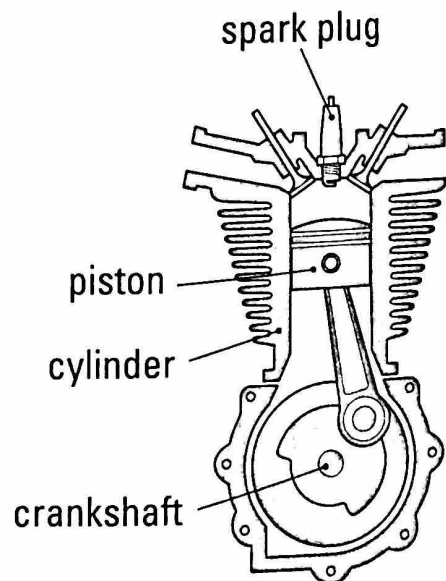
Engines are far more powerful than muscles so machines can move much faster than legs. On a

motorway, a car can travel at a speed of up to 120 kilometres an hour. The driving force under the bonnet of each car is an internal combustion engine. The engine is a *combustion* engine because it burns or combusts fuel. It is an *internal* combustion engine because the fuel burns inside the engine's cylinder.

Cars need petrol like humans need food. They get the energy to move by burning petrol inside their engines. Petrol, a **fossil fuel**, has energy locked inside it and this energy is set free inside the car engine and it is used to turn the car wheels.

How exactly is this energy released? Petrol is kept in a tank and is pumped along a pipe to the engine. A mixture of air and petrol comes into a cylinder in the engine and a piston squeezes the mixed-up air and petrol into a small space at the top of the cylinder (see diagram). Then an electric spark, caused by turning the ignition key, jumps from a spark plug which is plugged into the top of the cylinder. This causes the petrol and air to explode, pushing the piston back down again. These continuous explosions make the piston move up and down in the cylinder. The up-and-down motion of the piston causes the crankshaft to spin and this turns the wheels round and round. **Emissions** from the burning petrol are pushed out of the engine through the exhaust pipe.

Since burning fossil fuels produces **fumes**, which pollute the environment, the search is on to find another more environmentally friendly means of powering cars. Some modern cars do not burn petrol but use energy from the sun and other sources like electricity, stored in a battery. Cars that run on electricity, for example, are both cleaner and quieter. In fact, the first car to go faster than 100 kilometres an hour was battery-powered. It was called 'La Jamais Contente' and it broke the record over 100 years ago, in 1899!



Examine this Explanation

Examine the explanation carefully and answer the following.

① Underline the sentences which explain (a) what a car is and (b) what an engine is.

② Explain the highlighted words from the passage, using a dictionary.

transport _____

vehicle _____

petrol _____

fossil fuel _____

emissions _____

fumes _____

③ Write one fact from the explanation which proves that engines are more powerful than muscles. Write another example of your own.

④ In the explanation find and write another word for each of the following.

petrol _____ combust _____

internal _____ set free _____

⑤ Write five sentences to explain how a car engine works.

First _____

Then _____

This causes _____

The explosion forces _____

Because of this _____

⑥ What new and interesting fact have you learned about car engines?

Follow-up Activity

With your teacher or guardian, browse the website at www.sei.ie to explore alternative forms of energy to fossil fuels.