# Revision Notes for Class 8 Science

# Chapter 3 – Coal and Petroleum

**Natural Resources:**

- Everything that nature provides is considered a natural resource.
- They contribute to a country's economy.
- Natural resources can be broadly categorised into two types based on the abundance of various resources in nature:

**1. Inexhaustible Natural Resources:**

- These resources are abundant in nature and are unlikely to be exhausted as a result of human activities.
- Sunlight and air are two examples.

**2. Exhaustible Natural Resources:**

- These resources are scarce and can quickly become depleted if they are overused.
- Forests, wildlife, minerals, coal, petroleum, and other natural resources are the examples.

**Fossil Fuels:**

- Coal, petroleum, and natural gas are examples of non-renewable natural resources.

- Millions of years ago, fossil fuels were produced from the dead remains of live species.
- Fossil fuels are finite resources that cannot be replenished.

**Coal:**

- Coal is a black substance that is as hard as stone.
- One of the fuels used to prepare food is coal.
- It was once utilised in railway engines to generate steam to power them.
- It's also utilised to generate electricity in thermal power plants.
- Coal is also employed as a source of energy in a variety of sectors.
- Dead plants were slowly transformed to coal under intense pressure and high temperature.
- Carbonisation is the lengthy process of converting dead plants into coal, because coal is primarily made up of carbon.
- Coal is classified as a fossil fuel since it was created from the leftovers of plants.
- When coal is burned in the presence of air, it burns and produces primarily carbon dioxide gas.
- In industry, coal is processed to produce useful products such as coke, coal tar, and coal gas.

**Coke:**

- It's a dark, rough, porous substance.
- It's a carbon that's practically completely free of impurities.

- Coke is utilised in the production of steel as well as the extraction of a variety of metals.

**Coal Tar:**

- It's a dark, thick liquid with an obnoxious odour.
- It's made up of almost 200 different chemicals.
- Coal tar is used as starting materials for the manufacture of various substances used in everyday life and industry, such as synthetic dyes, drugs, explosives, perfumes, plastics, paints, photographic materials, roofing materials and so on.
- Coal tar is also used to make naphthalene balls, which are used to repel moths and other insects.
- Bitumen, a petroleum product, is now used to metalize roads in place of coal tar.

**Coal Gas:**

- Coal gas is created when coal is processed to make coke.
- Many companies near coal processing plants use it as a source of energy.
- For street illumination, coal gas was employed.
- It is now employed as a heat source rather than a light source.

**Petroleum:**

- Petrol and diesel are made from petroleum, a natural resource.
- Petroleum is formed from the words petra (rock) and oleum (oil) since it is obtained from between the rocks beneath the Earth.

- Petroleum is made up of organisms that live in the water.
- When these organisms perished, their remains sank to the seafloor and were covered in layers of sand and clay.
- The absence of air, high temperature, and high pressure turned the dead organisms into petroleum and natural gas over millions of years.

**Refining of Petroleum:**

- Petroleum is a thick, viscous liquid with a dark colour.
- It has an unpleasant odour.
- It is made up of a variety of ingredients such as petroleum gas, gasoline, diesel, lubricating oil, paraffin wax, and so on.
- Refining is the process of separating the various constituents/fractions of petroleum.
- It takes place in a petroleum refinery.

**The Following Table Gives Details About Petroleum Constituents and Their Applications.**

| **Sr. No.** | **Constituents of Petroleum** | **Uses** |
|---|---|---|
| 1. | Petroleum Gas in Liquid form (LPG) | Fuel for home and industry |
| 2. | Petrol | Motor fuel, aviation fuel, solvent for dry cleaning |

| | | |
|---|---|---|
| 3. | Kerosene | Fuel for stoves, lamps and for jet aircrafts |
| 4. | Diesel | Fuel for heavy motor vehicles, electric generators |
| 5. | Lubricating Oil | Lubrication |
| 6. | Paraffin wax | Ointments, Candles, Vaseline etc. |
| 7. | Bitumen | Paints, road surfacing |

- Petroleum and natural gas are used to make a variety of useful compounds. These are also called as Petrochemicals.
- They are used in the manufacturing of products like Detergents, fibres (polyester, nylon, acrylic, etc. ), polythene, and other man-made polymers.
- Fertilisers are made from hydrogen gas, which is derived from natural gas (urea).
- Petroleum is sometimes known as "black gold" due to its high commercial value.

**Natural Gas:**

- Compressed Natural Gas is a very essential fuel since it is easy to transfer through pipes and can be compressed and stored under high pressure.
- It does not pollute the environment and has a high calorific value.
- CNG is utilised to generate electricity.

- It is now used as a transportation vehicle fuel.
- It is a cleaner fuel.
- Natural gas is also utilised as a raw material in the production of a wide range of chemicals and fertilisers.
- India has enormous natural gas reserves.
- Natural gas has been discovered in Tripura, Rajasthan, Maharashtra, and the Krishna Godavari delta in our country.
- The availability of coal and petroleum is restricted. We should use them with caution.
- The Petroleum Conservation Research Association (PCRA) in India offers tips on how to save petrol and diesel when driving.

**The Following are Their Recommendations:**

1. Drive at a consistent and moderate speed as far as feasible;
2. Turn off the motor at traffic signals or other places where you must wait;
3. Maintain proper tyre pressure.
4. Ensure that the car is maintained on a regular basis.