

# Fossil Fuel Formation

Fossil fuels: composed of partially decayed remnants of organisms

- ◇ Consist of Natural Gas, Coal, Oil (Petroleum) and more!
- ◇ Fossil fuels are made of hydrocarbons (carbon and hydrogen)
- ◇ They are nonrenewable resources.
- ◇ Fossil fuel takes hundreds of millions of years to form.



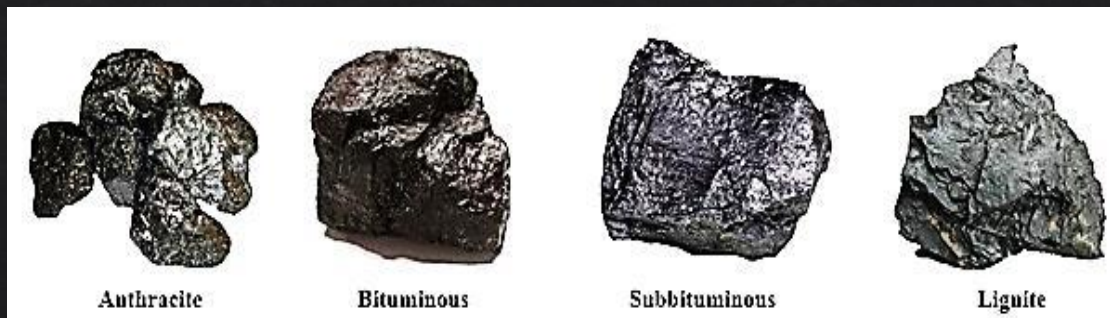
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PERMIAN



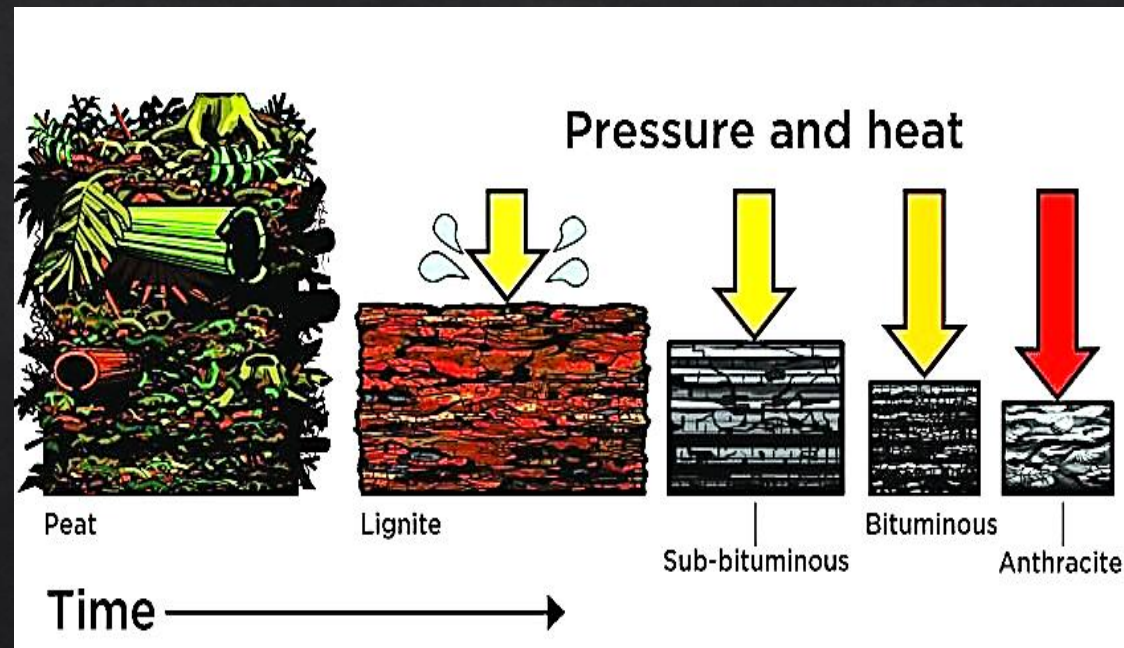
# Fossil Fuel Formation: Coal

- ◇ Organic sedimentary rock formed from plant remains deposited in swamps and marshes
- ◇ Then exposed to large amounts of heat and pressure for eons (longer than eras).
- ◇ Burning coal is one of the largest sources of  $\text{CO}_2$ =Combustion



# Fossil Fuel Formation: Coal

1. Dead plants get buried and compacted to create peat.
2. Plant material breaks down releasing natural gas.
3. Peat is further compacted to create lignite (brown coal)
4. Lignite is compacted to create bituminous coal (soft coal)
5. Finally, bituminous coal is compacted to create anthracite (hard coal)

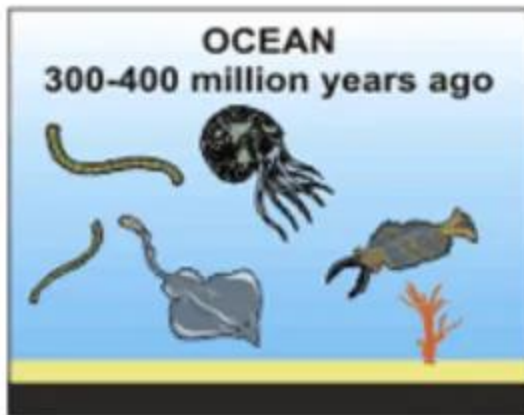


Organic Materials + Pressure + Heat + Time = COAL

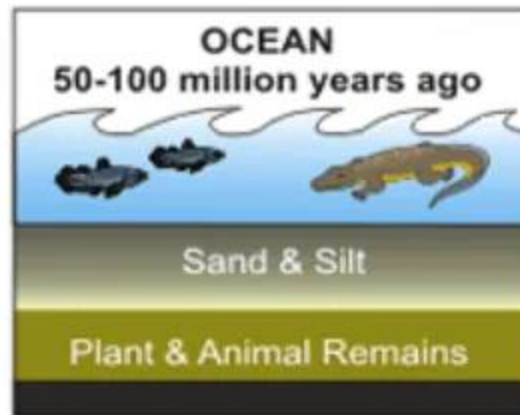
# Fossil Fuel Formation: PETROLEUM (OIL)

- ◇ Oil is a thick, liquid fossil fuel
- ◇ The United States consumes about one third of all the oil produced in the world.
- ◇ Oil was formed when large numbers of microscopic aquatic organisms died and settled in the sediments

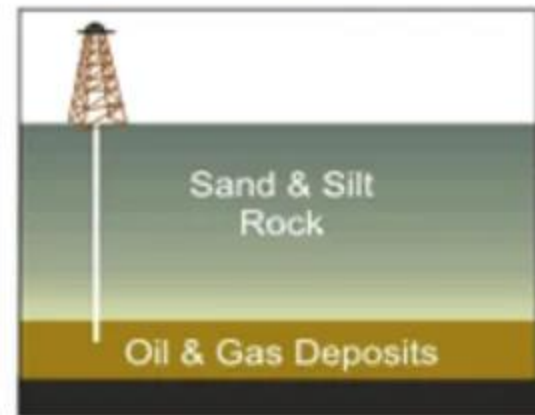
## PETROLEUM & NATURAL GAS FORMATION



Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of silt and sand.



Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.



Today, we drill down through layers of sand, silt, and rock to reach the rock formations that contain oil and gas deposits.

# Fossil Fuel Formation: NATURAL GAS

- ◇ It is a mixture of highly flammable gases, like methane, which are made from plants or animals.
- ◇ Formation of natural gas typically starts the same as oil.
- ◇ If heat is greater than 300 °C, the oil is further broken down to form natural gas



# Draw, Label and Color Images

Make sure to understand that pressure, heat, and time are needed to create these resources.

