Dessa shapiro

6/3

Period 3

**Final science project Notes:**

Coal: <https://drive.google.com/file/d/1NsLSa5uSZb0cTMimSUZQcwPA8ZcVm9sW/view>

oil/ gas: pathway: <https://adventuresinenergy.org/What-are-Oil-and-Natural-Gas/How-Are-Oil-Natural-Gas-Formed.html#:~:text=Stage%201%20%2D%20All%20of%20the,ocean%20millions%20of%20years%20ago.&text=Over%20millions%20of%20years%2C%20layer,and%20pressure%20began%20to%20rise>.

* sun: grows microscopic plants and those plants are eaten by animals to give them energy sun stored as carbon molecules in their bodies
* After millions of years layer after layer of sediment and other plants and bacteria were formed.
* buried deeper, heat and pressure rose. The amount of pressure and the degree of heat, along with the type of biomass, determined if the material became oil or natural gas. More heat produced lighter oil. Even higher heat or biomass made predominantly of plant material produced natural gas.
* Some oil and natural gas migrated all the way to the surface and escaped. Other oil and natural gas deposits migrated until they were caught under impermeable layers of rock or clay where they were trapped. These trapped deposits are where we find oil and natural gas today.
* Hydrocarbons Important part of pharmaceuticals and other things. Cleaner-burning fuels are contributing to improved air quality. And fossil fuels may prove to be the ideal source of hydrogen for clean power generation.
* Oil can be used to make energy
* *Conventional steam* - Oil is burned to heat water to create steam to generate electricity.
* *Combustion turbine* - Oil is burned under pressure to produce hot exhaust gases which spin a turbine to generate electricity.
* *Combined-cycle technology* - Oil is first combusted in a combustion turbine, using the heated exhaust gases to generate electricity. After these exhaust gases are recovered, they heat water in a boiler, creating steam to drive a second turbine.

Food pathway:

* sun: grows plants with the sun's energy sun stored as (carbon molecules in their bodies from sun/plants)
* Animals eat and digest the plants storing and using their energy stored in there bodies
* Other animals eat those animals and process continues
* Humans using different ways to cook/ increase energy and or fat/taste of the food such as cooking them in oil and adding ingredients
* Starts processing different foods using man made chemicals
* Some foods can produce oils (see example above to see how energy is created)

Animal power:

* sun: grows plants with the sun's energy sun stored as (carbon molecules in their bodies from sun/plants)
* Animals eat and digest the plants storing and using their energy stored in there bodies
* People use the energy stored from plants in the animals bodies and muciels to perfroe labor
* They kill and use the animals oil (see above) to make fuel for lamps and produce heat or to use their meat as food and convert it into their own energy.

Biomass:

* The sun is used for photosynthesis and the plants use the sun's energy to reproduce and grow seed
* Which are then used/ extracted from to make oil (veg. oil)
* Then through transesterification it can make more types of useful energy sources such as fuel and glycerol( which is used for many products and foods)
* It can also be burned in a boiler to produce high-pressure steam. This steam flows over a series of turbine blades, causing them to rotate. The rotation of the turbine drives a generator, producing electricity.

Photovoltaic

* Solar radiation (photon-light) hits a surface such as a solar panel
* The panial is able to adsorb the sunlight and stor it with PV array
* This array uses A **photovoltaic** (**PV**) cell, commonly called a solar cell, which is a non mechanical device to convert sunlight directly **into electricity**.

Hydroelectric