

# FOSSIL FUELS UNCOVERED

(6) Unlike oil and natural gas that can seep through sediment layers, coal, once formed, is trapped under the earth. Coal is more accessible than the other fossil fuels, easier to obtain and the cheapest to harvest. For these reasons, coal was the first fossil fuel to be used widely, however, when burned, it is also the most polluting by far. Not only does coal release a lot of carbon dioxide (a greenhouse gas) when burned (as all fossil fuels do), coal often contains contaminants that cause it to release other forms of toxic pollution like sulfur dioxide and nitrogen oxide.

(7) Though fossil fuels are useful and we have designed our economies and societies to become dependent on them, this dependency

comes with a huge environmental cost as burning of all fossil fuels lead to the production of greenhouse gases. The concern over anthropogenic (human caused) climate change is mounting and there's a larger cry from scientists, the public, environmental organizations and even some governments to "Keep It In The Ground". This slogan champions moving away from fossil fuel dependency to renewable resources of energy and a more sustainable way of living. Though some fossil fuels continue to be formed via the same processes that have been mentioned in ancient times, the rate of fossil fuel formation is so slow that fossil fuels are considered a non-renewable resource. We can't renew or regenerate it as quickly as we are using it up.

## Article Questions

- 1) What are fossil fuels made from?  
Fossil fuels are made from the organic remains of ancient plants and animals that lived 300-400 million years ago. (1)
- 2) What is one main difference between the formation of oil (petroleum) and coal?
  - 1) Oil is formed in aquatic/marine ecosystems and coal is formed on land. (3)
  - 2) Oil is formed from the remains of marine creatures (including zooplankton and phytoplankton) and coal is formed from the remains of terrestrial plants. (4)
- 3) Why do organic remains need to be in anaerobic conditions for fossil fuel formation to occur?  
Anaerobic conditions are required to prevent aerobic bacteria (which require oxygen) from thriving. If there is oxygen, these bacteria will quickly decompose organic remains and prevent them from forming fossil fuels. (2)
- 4) Besides anaerobic conditions, what other conditions need to be present for fossil fuels to form?
  - 1) Remains need to be buried.
  - 2) Remains need to be exposed to high pressure.
  - 3) Remains need to be exposed to high heat. (4)
- 5) Why is coal the most widely used fossil fuel?  
It is the most abundant, easily accessible, easy to obtain and cheapest to extract. (6)
- 6) Though fossil fuels have been and are still very useful for providing us with heat and energy, they can produce serious problems. List three problems that were discussed in this article.
  - 1) They produce carbon dioxide when burned and carbon dioxide is a greenhouse gas that promotes climate change. (7)
  - 2) Some fossil fuels, when burned, release toxic pollutants like nitrogen oxide and sulfur dioxide. (6)
  - 3) Extracting them (like in petroleum extraction) can lead to oil spills. (5)
- 7) What do you think "Keep It In The Ground" actually means?  
It literally means to stop digging, drilling and mining for fossil fuels so that they stay buried in the ground or under the ocean floor. (7)