Fossil Fuels Classification Table

Answer Key

Name _____ Date _____

Directions: Read the questions below before you begin your reading. Underline or highlight information in your reading that will help you complete this table. Fill in the table to help you summarize your findings.

Type of Fossil Fuel	What is it made of? Where does the matter and energy in this type of fossil fuel come from?	How is it formed?	How is it extracted?	What are the environmental impacts of the main extraction method?	How do humans use this type of fossil fuel?	What are the benefits of these uses?	What are the environmental impacts of these uses?	Where does the matter and energy in this type of fossil fuel end up after being used in this way?
Petroleum	Algae and plants dating back several million years	Organic material mixed with other sediments and was buried. Over millions of years under high pressure and high temperature, the remains of these organisms transformed into oil.	Drilling vertical wells or tar sands extraction	Oil spills on land or in water from wells, contaminated water supplies from tar sands extraction, surface habitat disturbance	Transportation fuel, diesel generators, and many products including contact lens, medicines, plastics, etc.	Affordable energy, transportation fuel, many chemicals and medicines, crucial items such as heart valves, contact lens, and bandages	Air pollution and climate change	The matter often ends up as air pollution unless used for products (in which case, it is in the product), while the energy is used for generating electricity or powering car engines.

Coal	Million-year-old algae and plants	Over time, organic material was buried and compressed. As it shifts deeper into the Earth, it encounters higher temperatures and pressures.	Surface or underground mining	Surface habitat disturbance or destruction, water pollution from toxic coal tailings, waterways are cut off or contaminated by valley fill. Toxic byproducts of the mining and explosive processes also pollute the air.	Fuel, electricity, coke, and synthetic products	Relatively inexpensive to locate and extract, source of fuel, and used to make steel	Air pollution and climate change	The matter ends up in particulate air pollution and greenhouse gas emissions unless used for products (in which case, it is in the product). The energy released is used for electricity and fuel.
Natural Gas	Million-year-old algae and plants	As the plants and algae decompose, they are covered by layers of sediment. Over millions of years, the organic matter is compressed. As it moves deeper into the Earth, it encounters higher temperatures. The compression and high temperatures cause the carbon bonds in the organic matter to break down, thus producing thermogenic methane—natural gas.	Drilling vertical wells into sedimentary basins to pump it out, hydraulic fracturing (also known as fracking), horizontal drilling, acidizing	Water contamination and heavy water use, can cause micro-earthquakes when extracted with fracking, land disturbance where drilling occurs	Heating, cooling, cooking, transportation fuels, waste treatment, food processing, refining metals and petroleum, powering home appliances, generating electricity via fuel cells	Cleaner-burning fuel than coal or petroleum, less expensive than using petroleum for electricity	Climate change	The matter ends up in particulate air pollution and greenhouse gas emissions unless used for products (in which case, it is in the product). The energy released is used for heating, cooling, and transportation energy.