

Title: Origin of Coal

Level: Secondary

Day/Time: 15 min.

KERA Goals: 1.2

Objective: Students will information about how coal is formed.

Background Information-- How is coal formed?

Coal is classified by geologists as a mineral. But most minerals, like salt or iron ore, were formed by inorganic matter. Coal, on the other hand, came from organic matter-- plants that lived about 300 million years ago.

During the Pennsylvanian Period in earth's history, the earth was covered with huge swampy forests of giant ferns, reeds and mosses, which grew taller than our tallest trees today. As these plants died and fell into the swamp water, new plants grew. In time, there was a thick layer of dead, decaying plants in the water.

The surface of the earth also changed and dirt washed into the water covering the dead plants, preventing them from completely decomposing. More plants grew but they too died and fell into the water, forming a separate layer of dead decaying plants, which over time was also covered by sediments, preventing complete decomposition. After millions of years many layers had formed, one on top of the other.

The weight of the overlying layers compressed the lower layers of plant matter forming peat. Heat and pressure, caused by overlying sediments, produced chemical changes in the peat, forcing out oxygen and hydrogen leaving behind rich carbon deposits-- coal.

Geologists estimate that a layer of plants 20 feet thick may been required to forma a coal seam one foot thick. Coal seams vary thickness, ranging from only a few inches thick to more than 100 feet in thickness.

Provided by National Energy Foundation.