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**Title:**How Coal is Used-- Student Worksheet

**Level:** Intermediate, Middle School

**Time:** One Day



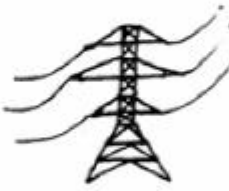
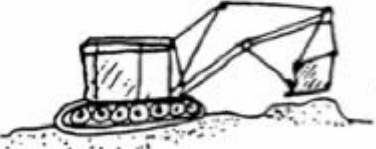

**KERA Goals:** 2.2

**Objective:** Learn some uses of coal and practice brain storming solutions to real life situations.

**Materials:** Copy of each of the following worksheet

**Activity:**

### How Coal is Used Student Worksheet

	1.	1. Coal is mined either by surface or by underground mining. Before it leaves the mine, it is often cleaned, crushed, and sorted.
	2.	2. About 2/3 of our coal is transported by rail, much of it in special cars. One coal train can carry as much as 10,000 tons per trip.
	3.	3. 46% of U.S. electrical generators are powered by coal. Power plants burn coal to turn water into steam. The steam turns a turbine, a series of wheels with vanes like a windmill. The turbine rotates coils on wire in a generator through a magnetic field to produce electricity.
	4.	4. Electricity is transported on wires at very high voltages. Electricity is usually not shipped more than 600 miles by wire because of expense and loss of energy. Only 26% of the original energy remains when the electricity is used.
	5.	5. Electricity lights the lamps in your home. How many other uses of electricity in your home can you name? Write them on the back of this paper. Then place a star before those you think that you could do without.

### Some Facts About Coal

Directions: Decide whether each of the following facts is a problem (P) or an opportunity (O). Put a P or an O—or both—in each blank. On the back of this sheet, write down ways some of the problems could be overcome. We will have discussion of these ideas.

- \_\_\_\_\_ 1. 90% of U.S. fossil fuel reserves (coal, oil, natural gas) are coal.
- \_\_\_\_\_ 2. Some deep mines are dangerous.
- \_\_\_\_\_ 3. 50% of our minable coal is in the western United States.
- \_\_\_\_\_ 4. We have enough coal to last for 350 years, at the current level of use.
- \_\_\_\_\_ 5. Mining coal can cause damage to the environment.
- \_\_\_\_\_ 6. In the future, we will rely on coal as a source for synthetic oil and gas.

*Provided by Pittsburgh Energy Technology Center*

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