



Coal Mines, Oil Wells, and Iron Ore Mines

Coal Mining

* Choose one of the types of underground mining techniques. Illustrate the process used to mine the coal and label the important parts of the mine. Identify the type of mine:

Shaft Mine: has a vertical entrance into a mine

Slope Mine: has an entrance to a mine driven down through an inclined coal seam

Drift Mine: has a water-level entrance into a mine

* Explain the mining that is done when the coal seam is found near the Earth's surface. Explain the meaning of each name and the differences among the three types of mines:

Open-Pit Mine

Strip Mine

Surface Mine

* Miners use a variety of processes to mine the coal from underground and surface mines. One of the main types is **Longwall Mining**. Explain the process, the equipment used, and the problems encountered by miners who do this type of mining.

* Define the two main types of coal. Explain the differences between the two, and locate the main areas of coal mining. Explain the type of mining that is done to recover each type of coal:

Bituminous Coal

Anthracite Coal

* Use a variety of resources to research the **Pittsburgh Coal Seam**. Identify the type of coal found there, the size and location of the seam, and the uses for the coal mined from the seam.

* Choose one of the important factors in coal mining. Describe and define the factor and its use in coal mining. Create an illustration to help explain the factor and its impact on coal mining:

- the role of mules in the mines
- the jobs of the breaker boys in the mines
- the longwall mining method of bituminous mining
- the room-and-pillar method of anthracite mining



Oil Drilling

* Use a variety of resources to research the methods used to locate an area in which to start drilling for oil. Explain the type of expertise needed to make that determination, any equipment or technology used, and how the preparations are made for the drilling. Explain the problems that can occur prior to the commencement of drilling operations.

* Use a variety of resources to research the process used in drilling for oil. Identify the equipment used and the step-by-step procedure followed by the workers. Explain the problems encountered by the men and women working on an oil well.

* Create a visual display of an oil well. Include the necessary equipment and label all of the parts of the oil well. The display may be a poster, mural, flow-chart, model, diorama, brochure, or any other type of display.

* In 1982, the U.S. Steel Corporation acquired Marathon Oil. Explain the reasons for the acquisition and how it benefited the U.S. Steel Corporation. Use a variety of resources to research the history and background of Marathon Oil and how and why U.S. Steel acquired it.

Iron Ore Mining

* Describe the ores which contain iron: hematite and magnetite. Define each and explain which is the most useful in providing iron for use in steelmaking.

* Identify the locations of iron ore mines in the United States. Identify the main locations for mines which supplied iron ore to the Pittsburgh area steel mills. Find the Mesabi Range in Minnesota and explain its importance in iron ore mining.

* Use a variety of resources to research iron ore mining. Explain how iron ore is mined, the equipment and technology used, and the transportation of the ore to the factories for its use.

* Define the term, pig iron. Explain what it is, how it is developed, and its use in the steelmaking process. Create an illustration, with labels, to show the process of smelting the iron and why the produce was given the name, pig iron.