

EXPLORATION ACTIVITIES

[Return To Middle School Lesson Plans](#)

Title: Exploration Activities

Level: Middle School

Time: 2 hours

KERA Goals: 1.15; 2.22; 2.4

Objective:

The students will understand the stages in finding, removing, and processing mineral resources.

Activity:

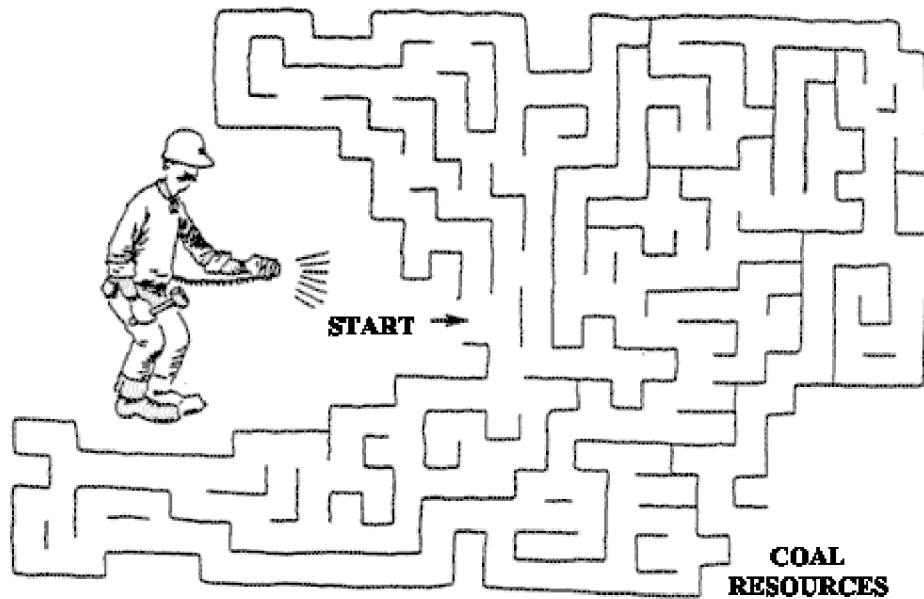
"Exploration Hunt." The teacher will hide or bury 2-3 black colored rocks on the playground and give each student a copy of the playground map. The students will use teacher-developed clues to locate and map the location of the rocks. You might want to use compasses or grids to give the students their clues.

"Leasing Mineral Rights." The leased site should be 6 x 15 feet. The student will place a location marker (at the actual treasure site) and then place the 4 corner posts. The last thing they need to do is draw their site on their maps. This could be done in small groups.

Mineral Resources Maze

This miner is searching for Coal Resources. Follow his path through the maze.

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Activity:

Have the students write a story about what the "miner" might find while he is searching for his treasure.

Take the best story and develop a script for a play. Have students perform as actors in the play.

Activity: Exploration

Have each student use a red crayon to color a small shape of their choice on a piece of paper. Let the student decide where to place the shape. Have the student color over the sheet with black crayon, covering the initial colors. Exchange the sheets among students and have them use a pin to scratch small areas in the black color to show the color underneath in an attempt to discover and outline the red area. Have the student pretend that each area they scratch is an exploration attempt and costs in excess of \$1,000,000. Have the student determine the cost to find the red area (coal seam) and to outline the entire spot. Relate the activity to the cost associated with finding and defining coal bed. For the first layer use colored pencils instead of crayon.

Activity:

Have the students organize into small groups as "exploration companies" and name their company.

Have the companies determine:

What was the mean (average) cost of finding their ore bodies?

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Determine median and mode of their exploration costs

Which company had the lowest/highest exploration costs? Ask the students why they had the lowest/highest cost.

Assume some costs for mining ore and waste, processing, and reclamation.

example:

mining: \$1 / ton

processing: \$5 / ton

reclamation: \$1,000,000

With these costs and the exploration cost, have students determine how big their coal bed must be to be mined at a profit.

Adapted from materials provided by The Society for Mining, Metallurgy, and Exploration, Inc.