

# Coal Power Plants of Kentucky



**Recommended Grades:**

K-8



**Time Needed:**

15-20 minutes

## Description

- Students will learn about coal plants in Kentucky and their environmental impact.

## Learning Objectives

- Learn the locations of coal-fired power plants across Kentucky
- Understand how pollution from nearby power plants can impact neighboring areas
- Use spatial thinking to help understand the spread of air pollution

## Materials

- Orange cones or chips
- Chains
- Lanyards

## Preparation

- Review the locations of power plants in Kentucky on the accompanying map as well as the buffer zones around the power plants that show the surrounding areas that may be affected by air pollution from the plants.

**Rules: (e.g., have students remove shoes before walking on map)**

## Directions

1. Divide the class into four groups and assign them a team: red, blue, yellow, or green. Pass out lanyards and have each team go to their Base Camp (the corresponding colored circles in each corner of the map).
2. Introduce the topic. Talk to the students about power plants in Kentucky. The following facts may be useful in introducing the topic:
  - Coal is a type of rock that can be burned to give us heat and energy.
  - In Kentucky, the coal industry provides over 6,000 jobs.
  - Burning coal can release materials that pollute our air.
  - Coal occurs in 57 out of Kentucky's 120 counties.

- Almost all the energy in Kentucky is produced from coal.
  - In 2016, Kentucky coal mines produced about 42.9 million tons of coal
3. Have four students come up at a time (one from each team) to receive a poker chip or cone. Show them a coal plant location on the provided map and have them mark that location as closely as they can with the poker chip or cone. Repeat this with four more students until all locations are marked. Make sure that the markers are placed in their correct approximate locations.
  4. Once all plants have been marked, talk to the students about how air pollution can travel away from coal plants and affect nearby areas.
  5. Next, use the chains or lanyards to mark the buffer zones. You can have the students mark the zones around the coal plants that air pollution has the potential to reach that correspond with the zones on the provided map.
  6. Once the buffer zones are marked, give the students an opportunity to carefully walk around the map and observe the different areas that could be affected by power plants.
  7. Ask the students to identify the town your school is in on the map. Are there any power plants near your town?
  8. Ask the students/point out yourself any large cities that are close to coal power plants.
  9. Conclude by asking the students if they have any questions about the map/power plants and what they have learned in this activity.

Optional extended discussion: Talk about different types of air pollution from the coal power plants and how some types are more of a local concern and other types are more of a global concern.

**Connections to the Kentucky Curriculum:**

4-Ess3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.