

## **HU GK-12 Activity**

**TITLE:** Pollution Classification

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**DCPS STANDARDS:** E.8.1

### **GOALS:**

1. Scholars will be able to differentiate between natural and human-generated pollution and give at least three examples of each.

### **OBJECTIVES:**

1. Given magazine cutouts, scholars will describe, in sentences, at least six specific examples of pollution and will classify each as natural or human-generated.

### **PREREQUISITE KNOWLEDGE:**

#### *Background*

Pollutants are contaminants introduced by man into the environment. Pollutants usually cause harm or discomfort to humans, other living organisms or damage the environment. Pollution can be in the form of chemical substances, or energy such as noise, heat, or light. Pollutants can be naturally occurring substances or human generated substances. An example of a natural pollutant is Volcanoes because they spread ash in the air. Scientists believe that volcanoes can affect the weather patterns. Volcanoes are one of the biggest forms of natural air pollution. Another type of natural air pollution is pollen. Pollen causes hay fever, which is an allergy and makes people feel like they have a cold. Windstorms can also act as a natural form of pollution. The wind blows dirt and sand into the atmosphere. Even cows can be considered natural pollutants because they release methane gas into the atmosphere. Forest fires is also a form of pollution as the smoke from fires can be carried miles away and affect areas far from the location of the fire. Artificial or human generated pollution is usually as a result of human consumption, industrial production, agricultural activities, mining, transportation or other sources.

### **ESSENTIAL QUESTIONS:**

1. What is the difference between a natural pollutant and an artificial pollutant?
2. How does pollution affect the environment?
3. Does pollution only affect the immediate area or could pollution in a small area contribute to stress conditions in other areas further away?

### **LABORATORY MATERIALS:**

Magazines with photographs of natural and artificial pollutants, lined paper

### **DIFFERENTIATING INSTRUCTION:**

Readings are at scholar ability level. Diagrams will be completed in small groups or individually with teacher guidance or as a class, depending on the needs of that class

period. Manipulative for cut-and-paste version of laboratory activity will be made available. Guided note taking using multiple colors will be used to aid visual learners and assist with their organization. Scholars can work in pairs or groups of 3 to ease workload and aid understanding. Interactive reading and note taking with alternative text will be made available for advanced scholars. Frequent questioning will be applied to check for understanding.

**RATIONALE:**

This activity is designed to help scholars differentiate between natural pollution and pollution caused by humans.

**RESEARCH ACTIVITY:**

Teacher preparation:

1. Cut out photographs of natural and human-generated pollutants from a magazine.
  - a. Try to focus on areas the scholars are familiar with, such as the Anacostia River and areas in and near Washington, DC.
2. Cut out photographs of the after effects of air, water, and land pollution by displaying photographs of areas like China that have heavy pollution.

Student activity:

1. Paste cutouts of natural and human generated pollution and pollutants on a Venn diagram.
2. Describe why each pollutant is classified as such underneath the photograph.

**EVALUATION AND ASSESMENT:**

1. Scholars will give at least six specific examples of pollution and will classify each as natural or human-generated.