Lesson 2: Plate Tectonics and Volcanism

Subject of Lesson: Earth Science—Volcanoes

Grade Level: 9th

Time Estimate: 45 minutes

Objective(s)

- The students will:
  - define vocabulary terms related to volcanism.
  - demonstrate their understanding of what causes volcanoes to form and erupt.
  - Identify at least two of the effects volcanoes have/had on the Earth and its people.

NYS Learning Standard(s)

- Standard 2—Information Systems
  Students will access, generate, process, and transfer information, using appropriate technologies.
  - Key Idea 1: Information technology is used to retrieve, process, and communicate information as a tool to enhance learning.

- Standard 4—
  Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.
  - Key Idea 2: Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.

Anticipatory Set

<table>
<thead>
<tr>
<th>Step(s)</th>
<th>Key Questions, Comments, Directions</th>
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<tbody>
<tr>
<td>Review Vocabulary and introduce new terms</td>
<td>Vocabulary bingo</td>
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Body

<table>
<thead>
<tr>
<th>Step(s)</th>
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| Introduce volcanoes (video)      | National Geographic—How Volcanoes Form
                                             http://www.youtube.com/watch?v=jRfEGv p6wDU |
| Lecture/notes (textbook)         | Plate tectonics and volcanoes
                                             Location of volcanoes (plate boundaries, Ring of Fire)
                                             Types of volcanoes (composite and shield) |
<p>| Volcanoes of the past and present (videos) | Mt. Kilauea (present effects of plate tectonics and volcanism) |</p>
<table>
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| Benefits and drawbacks to volcanic eruptions | • **Drawbacks**  
  o Deadly pyroclastic eruptions (eruptions that spew super-heated ash, poisonous gas, and rock debris)  
  o Ruin homes  
  o Causes deaths  
  o Increased CO2 levels in the atmosphere  
  • **Benefits**  
  o Created 80% of the Earth’s surface  
  o Creates air  
  o Creates rich soil for farming  
  o Heat source for geothermal energy |