



## Kaboom! Volunteers in Classrooms

### Presentation Summaries and Related Next Generation Standards

Grades 1 and 2

#### Mount St. Helens 1980 Eruption

##### Presentation Summary:

This lesson begins by briefly explaining tectonic plates and how they collide with each other. Then it uses pictures (and a short 15 second video) to tell the story of the 1980 eruption, including events leading up to the eruption and the different volcanic eruption events (eg. earthquakes, landslide, ash). Afterward, students use instruments and creative sounds to recreate the eruption while the presenter tells the 1980 eruption story.

##### 1<sup>st</sup> Grade Standards

For 1<sup>st</sup> grade, performance expectations aren't directly connected, though science and engineering practices and crosscutting concepts do apply.

Science and Engineering Practices	Crosscutting Concepts
<p><u>Planning and carrying out investigations:</u>            Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>• Make observations (firsthand or from media) to collect data that can be used to make comparisons. (1-ESS1-2)</li> </ul> <p><u>Analyzing and interpreting data</u>            Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> <li>• Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (1-ESS1-1)</li> </ul>	<p><u>Patterns:</u></p> <ul style="list-style-type: none"> <li>• Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-ESS1-1),(1-ESS1-2)</li> </ul> <p><u>Connections to Nature of Science:</u>            Scientific Knowledge Assumes an Order and Consistency in Natural Systems</p> <ul style="list-style-type: none"> <li>• Science assumes natural events happen today as they happened in the past. (1-ESS1-1)</li> <li>• Many events are repeated. (1-ESS1-1)</li> </ul>

# Mount St. Helens 1980 Eruption

## 2<sup>nd</sup> Grade Standards

<p><b>2-ESS1-1.</b>            Use information from several sources to provide evidence that Earth events can occur quickly or slowly. [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.] [Assessment Boundary: Assessment doesn't include quantitative measurements of timescales.]</p>		
<p><b>2-ESS2-2.</b>            Develop a model to represent the shapes and kinds of land and bodies of water in an area. [Assessment Boundary: Assessment does not include quantitative scaling in models.]</p>		
Science and Engineering Practices:	Disciplinary Core Ideas	Crosscutting Concepts
<p><u>Developing and Using Models:</u>            Modeling in K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.</p> <ul style="list-style-type: none"> <li>• Develop a model to represent patterns in the natural world. (2-ESS2-2)</li> </ul>	<p><u>ESS2.A: Earth Materials and Systems:</u></p> <ul style="list-style-type: none"> <li>• Wind and water can change the shape of the land. (2-ESS2-1)</li> </ul> <p><u>ESS2.B: Plate Tectonics and Large-Scale System Interactions:</u></p> <ul style="list-style-type: none"> <li>• Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2-2)</li> </ul>	<p><u>Patterns:</u></p> <ul style="list-style-type: none"> <li>• Patterns in the natural world can be observed. (2-ESS2-2),(2-ESS2-3)</li> </ul> <p><u>Stability and Change:</u></p> <ul style="list-style-type: none"> <li>• Things may change slowly or rapidly. (2-ESS2-1)</li> </ul> <p><u>Connections to Nature of Science:</u>            Science Addresses Questions About the Natural and Material World</p> <ul style="list-style-type: none"> <li>• Scientists study the natural and material world. (2-ESS2-1)</li> </ul>

## Ecology: Survivors and Colonizers

### Presentation Summary:

This lesson begins by very briefly discussing (with pictures) the eruption events of May 18, 1980. Then, the presenter will lead students to think of factors that would affect whether a plant or animal could survive. Then students decide whether several plants/animals were survivors or colonizers. In the activity, students are assigned an organism (e.g elk, Douglas fir, pocket gopher) and the presenter will lead students to make a tangled “web” with string to demonstrate how all life on Mount St helens is very connected and dependent on each other for survival.

### 1<sup>st</sup> Grade Standards

<b>1-LS1-2.</b> Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]		
<b>Science and Engineering Practices</b>	<b>Disciplinary Core Ideas</b>	<b>Crosscutting Concepts</b>
<p><u>Obtaining, Evaluating, and Communicating Information:</u> Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> <li>• Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)</li> </ul> <p><u>Connections to Nature of Science:</u> Scientific Knowledge is Based on Empirical Evidence</p> <ul style="list-style-type: none"> <li>• Scientists look for patterns and order when making observations about the world. (1-LS1-2)</li> </ul>	<p><u>LS1.A: Structure and Function</u></p> <ul style="list-style-type: none"> <li>• All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)</li> </ul> <p><u>LS1.B: Growth and Development of Organisms</u></p> <ul style="list-style-type: none"> <li>• Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)</li> </ul> <p><u>LS1.D: Information Processing</u></p> <ul style="list-style-type: none"> <li>• Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)</li> </ul>	<p><u>Patterns:</u></p> <ul style="list-style-type: none"> <li>• Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2)</li> </ul> <p><u>Structure and Function:</u></p> <ul style="list-style-type: none"> <li>• The shape and stability of structures of natural and designed objects are related to their function (s). (1-LS1-1)</li> </ul> <p><u>Connections to Engineering, Technology, and Applications of Science:</u> Influence of Science, Engineering and Technology on Society and the Natural World</p> <ul style="list-style-type: none"> <li>• Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world. (1-LS1-1)</li> </ul>

## Ecology: Survivors and Colonizers

### 2<sup>nd</sup> Grade Standards

<p><b>2-LS2-1.</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]</p>		
<p><b>2-LS2-2.</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p>		
<p><b>2-LS4-1.</b> Make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]</p>		
<b>Science and Engineering Practices:</b>	<b>Disciplinary Core Ideas</b>	<b>Crosscutting Concepts</b>
<p><u>Planning and Carrying Out Investigations:</u> Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>• Make observations (firsthand or from media) to collect data that can be used to make comparisons. (2-LS4-1)</li> </ul> <p><u>Connections to Nature of Science:</u> Scientific Knowledge is Based on Empirical Evidence</p> <ul style="list-style-type: none"> <li>• Scientists look for patterns and order when making observations about the world. (2-LS4-1)</li> </ul>	<p><u>LS2.A: Interdependent Relationships in Ecosystems:</u></p> <ul style="list-style-type: none"> <li>• Plants depend on water and light to grow. (2-LS2-1)</li> <li>• Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)</li> </ul> <p><u>LS4.D: Biodiversity and Humans</u></p> <ul style="list-style-type: none"> <li>• There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)</li> </ul>	<p><u>Cause and Effect:</u></p> <ul style="list-style-type: none"> <li>• Events have causes that generate observable patterns. (2-LS2-1)</li> </ul> <p><u>Structure and Function:</u></p> <ul style="list-style-type: none"> <li>• The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)</li> </ul>