**Oregon’s First Geologists**

**Overview**: In this lesson students will learn how Native American tribes living in what is now Oregon incorporated geologic knowledge into their lifeways and cultures. It will describe tribes’ use of stone tools, designation of prominent landforms as significant and meaningful places, and oral traditions they maintained regarding geologic events to help them understand and organize the world they lived in. This lesson assumes students have some familiarity with or prior instruction in earth science concepts such as Oregon landforms, the rock cycle, plate tectonics, and earthquakes and tsunamis.

**Background for teachers:**

The geosphere (solid and molten rock, soil, and sediments) is one of earth’s four major systems, along with the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth’s surface materials and processes and make human life possible.

Humans rely on the geosphere to provide a hospitable place to live, nutrients to support plant and animal life we depend on, and useful materials for everyday life. Earthquakes, volcanoes, and landslides have been hazards of human life for millennia, and we continue to seek to understand them, adapt to them, and minimize their impact on human survival. Striking geologic landforms and landscape features such as the Snake River Canyon, Crater Lake, the Columbia River Gorge, and Mount Hood evoke awe in us and inspire storytelling, art, and a sense of connection to and/or curiosity about forces bigger and more powerful than ourselves. Understanding and appreciating the earth is thus critical to human survival and the ability to flourish. This was as true for the first humans who lived in what is now Oregon as it is for us today.

Native Americans had an intimate knowledge of and reverence for the land on which they lived and sought to understand and use it to support their lives and cultures. They made use of the many plants and animals found in Oregon’s wide variety of ecosystems and regions (mountains, inland valleys, the Great Basin, the Pacific Coast, the Columbia Plateau), which had been shaped and influenced by ancient geologic forces.

The Native American tribes in Oregon made use of different types of stone to make household tools and weapons, seeking out or trading among themselves to get access to the best type of stone available. They experienced earthquakes and tsunamis and landslides and sought to find ways to understand them and prepare for them. They navigated by geological landmarks and designated prominent landforms or features as special or significant places. They created both art and forms of communication on rocks.

Native American ways of understanding and adapting to Oregon’s geology and other earth systems may seem very different from our own, but this traditional knowledge allowed them to survive and thrive in the region for over 10,000 years, while also leaving the land, air, and waterways healthy and teeming with life. Today, many tribes in Oregon continue to embrace these traditional ways of knowing and living and are combining them with Western scientific methods in ways that will shape the future of our state.

**Learning Outcomes**:

* Students will understand how Native Americans’ understanding of geology informed their everyday lives.
* Students will learn Native American ways of knowing and means of understanding the natural world and geologic events, such as volcanoes, earthquakes, and tsunamis.

**Oregon science standards**:

4-ESS1 – Earth’s Place in the Universe

4-ESS2 – Earth’s Systems

4-ESS3 – Earth and Human Activity