

# VOLCANOES

## North Carolina State Standards

### Grade 1

1.E.2.1 Summarize the physical properties of Earth materials, including rocks, minerals, soils and water that make them useful in different ways.

1.L.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.

### Grade 2

2.P.2.1 Give examples of matter that change from a solid to a liquid and from a liquid to a solid by heating and cooling

2.E.1.4 Recognize the tools that scientists use for observing, recording, and predicting weather changes from day to day and during the seasons.

### Grade 3

3.P.2.2 Compare solids, liquids, and gases based on their basic properties.

3.E.2 Compare the structures of the Earth's surface using models or three-dimensional diagrams.

3.E.2.2 Compare Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps.

3.L.2.4 Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival of many plants.

### Grade 4

4.L.1 Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.

4.L.1.2 Explain how animals meet their needs by using behaviors in response to information received from the environment.

4.L.1.4 Explain how differences among animals of the same population sometimes give individuals an advantage in surviving and reproducing in changing habitats.

### Grade 5

5.E.1 Understand weather patterns and phenomena, making connections to the weather in a particular place and time.

5.E.1.2 Predict upcoming weather events from weather data collected through observation and measurements.

5.E.1.3 Explain how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation.

## Grade 6

6.E.2 Understand the structure of the earth and how interactions of constructive and destructive forces have resulted in changes in the surface of the Earth over time and the effects of the lithosphere on humans.

6.E.2.1 Summarize the structure of the earth, including the layers, the mantle and core based on the relative position, composition and density.

6.E.2.2 Explain how crustal plates and ocean basins are formed, move and interact using earthquakes, heat flow and volcanoes to reflect forces within the earth.

6.E.2.3 Explain how the formation of soil is related to the parent rock type and the environment in which it develops.

6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil quality and stewardship.

## Grade 7

7.E.1.3 Explain the relationship between the movement of air masses, high and low pressure systems, and frontal boundaries to storms (including thunderstorms, hurricanes, and tornadoes) and other weather conditions that may result.

7.E.1.4 Predict weather conditions and patterns based on information obtained from: • Weather data collected from direct observations and measurement (wind speed and direction, air temperature, humidity and air pressure) • Weather maps, satellites and radar • Cloud shapes and types and associated elevation

7.E.1.6: Conclude that the good health of humans requires: monitoring the atmosphere, maintaining air quality and stewardship.

## Grade 8

8.E.2.1 Infer the age of Earth and relative age of rocks and fossils from index fossils and ordering of rock layers (relative dating and radioactive dating).

8.E.2.2 Explain the use of fossils, ice cores, composition of sedimentary rocks, faults, and igneous rock formations found in rock layers as evidence of the history of the Earth and its changing life forms.

## High School

EEn.2.1 Explain how processes and forces affect the lithosphere.

EEn.2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

EEn.2.1.2 Predict the locations of volcanoes, earthquakes, and faults based on information contained in a variety of maps.

EEn.2.1.3 Explain how natural actions such as weathering, erosion (wind, water and gravity), and soil formation affect Earth's surface.

EEn.2.1.4 Explain the probability of and preparation for geohazards such as landslides, avalanches, earthquakes and volcanoes in a particular area based on available data.