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| <p>Important Concepts</p> <p>Water Cycle, Rock Cycle, Weather</p> <p>3-5 Level</p> | <p>Alaska Science Content Standard D1: Students develop an understanding of Earth's geochemical cycles.</p> <p>Alaska Science Content Standard D3: Students develop an understanding of the cyclical changes controlled by energy from the sun and by Earth's position and motion in our solar system. (Partially addressed)</p> |
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Grade Level Expectations:

The student demonstrates an understanding of geochemical cycles by

- [3] **SD1.1** recognizing that most rocks are composed of combinations of different substances
- [3] **SD1.2** describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth
- [4] **SD1.1** describing that most smaller rocks come from the breaking and weathering of larger rocks as part of the rock cycle
- [4] **SD1.2** recognizing the physical properties of water as they relate to the rock cycle
- [5] **SD1.1** observing a model of the rock cycle showing that smaller rocks come from the breaking and weathering of larger rocks and that smaller rocks (e.g., sediments and sands) may combine with plant materials to form soils (**L**)

The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by

- [3] **SD3.1** using recorded weather patterns (e.g., temperature, cloud cover, or precipitation) to make reasonable predictions (**L**)

According to AAAS's Benchmarks for Science Literacy\*, some of the things that students should know and understand by the end of fifth grade are:

By the end of the 5th grade, students should know that:

- When liquid water disappears, it turns into a gas (vapor) in the air and can reappear as a liquid when cooled, or as a solid if cooled below the freezing point of water. Clouds and fog are made of tiny droplets or frozen crystals of water.
- Air is a material that surrounds us and takes up space and the movement we feel as wind.
- The weather is always changing and can be described by measurable quantities such as temperature, wind direction and speed, and precipitation. Large masses of air with certain properties move across the surface of the earth. The movement and interaction of these air masses is used to forecast the weather.
- Waves, wind, water, and ice shape and reshape the earth's land surface by eroding rock and soil in some areas and depositing them in other areas, sometimes in seasonal layers.

\*Project 2061, American Association for the Advancement of Science, Benchmarks for Science Literacy. New York: Oxford University Press, 1993.

· Rock is composed of different combinations of minerals. Smaller rocks come from the breakage and weathering of bedrock and larger rocks. Soil is made partly from weathered rock, partly from plant remains—and also contains many living organisms.