

Grade 4 Science Pacing Guide in Detail by SOLs

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<p>*Ongoing throughout the year Scientific and Engineering Practices 4.1 The student will demonstrate an understanding of scientific and engineering practices by asking questions and defining problems; planning and carrying out investigations; interpreting, analyzing, and evaluating data; constructing and critiquing conclusions and explanations; developing and using models; obtaining, evaluation, and communicating information.</p>	
<p>First Nine-Weeks</p>	<p>Second Nine-Weeks</p>
<p>Earth Resources 4.8 The student will investigate and understand that Virginia has important natural resources. Key resources include</p> <ul style="list-style-type: none"> a) watersheds and water; b) plants and animals; c) minerals, rocks, and ores; and d) forests, soil, and land. <p>Living Systems & Processes 4.3 The student will investigate and understand that organisms, including humans, interact with one another and with their nonliving components in the ecosystem. Key ideas include</p> <ul style="list-style-type: none"> a) interrelationships exist between populations, communities, and ecosystems; b) food webs show the flow of energy within an ecosystem; c) changes in an organism’s niche and habitat may occur at various stages in its life cycle; and d) classification can be used to identify organisms. 	<p>Living Systems & Processes 4.2 The student will investigate and understand that plants and animals have structures that distinguish them from one another and play vital roles in their ability to survive. Key ideas include</p> <ul style="list-style-type: none"> a) the survival of plants and animals depends on photosynthesis; b) plants and animals have different structures and processes for obtaining energy; and c) plants and animals have different structures and processes for creating offspring. <p>Earth and Space Systems 4.4 The student will investigate and understand that the weather conditions and phenomena affect ecosystems and can be predicted. Key ideas include</p> <ul style="list-style-type: none"> a) weather measurements create a record that can be used to make weather predictions; b) common and extreme weather events affect ecosystems; and c) long-term seasonal weather trends determine the climate of a region.

Third Nine-Weeks	Fourth Nine-Weeks
<p>Earth and Space Systems</p> <p>4.6 The student will investigate and understand that there are relationships among Earth, the moon, and the sun. Key relationships include</p> <ul style="list-style-type: none"> a) the motions of Earth, the moon, and the Sun; b) the causes for Earth’s seasons; c) the causes for the four major phases of the moon and the relationship to the tide cycles; and d) the relative size, position, age, and makeup of Earth, the moon, and the sun. <p>4.5 The student will investigate & understand that the planets have characteristics and a specific place in the solar system.</p> <ul style="list-style-type: none"> a) planets rotate on their axes and revolve around the sun; b) planets have characteristics and a specific order in the solar system; and c) the sizes of the sun and planets can be compared to one another. 	<p>Earth and Space Systems</p> <p>4.7 The student will investigate and understand that the ocean environment has characteristics. Key characteristics include</p> <ul style="list-style-type: none"> a) geology of the ocean floor; b) physical properties and movement of ocean water; and c) interaction of organisms in the ocean.