

## Flagler County Environmental Science 2022-2023 Scope and Sequence

Year at a glance: Please note that the map is based on a 180-day schedule.

### Quarter 1: August 10, 2022- October 12, 2022

Topics	Benchmark/ Standards
<p>Introduction to Environmental Science and Earth's Systems (CH 1, 2, 3, 5.2)</p>          <p>Community Ecology (CH 4.1, 5.1, ,5.3, 8.2)</p>	<p><a href="#"><u>SC.912.L.17.10</u></a> Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle.</p> <p><a href="#"><u>SC.912.L.17.20</u></a> Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.</p> <p><a href="#"><u>SC.912.E.7.7</u></a> Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change.</p> <p><a href="#"><u>SC.912.E.7.8</u></a> Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively.</p> <p><a href="#"><u>SC.912.P.10.2</u></a> Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity.</p> <p><a href="#"><u>SC.912.L.17.6</u></a> Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.</p> <p><a href="#"><u>SC.912.L.17.5</u></a> Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.</p>

<p>Population Demographics and Human Population (8.1, CH 9)</p>	<p><a href="#"><u>SC.912.L.17.9</u></a> Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.</p> <p><a href="#"><u>SC.912.L.17.8</u></a> Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.</p> <p><a href="#"><u>SC.912.L.17.4</u></a> Describe changes in ecosystems resulting from seasonal variations, climate change and succession.</p> <p><a href="#"><u>SC.912.L.17.1</u></a> Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.</p> <p><a href="#"><u>SC.912.L.17.5</u></a> Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity.</p> <p><a href="#"><u>SC.912.L.17.13</u></a> Discuss the need for adequate monitoring of environmental parameters when making policy decisions.</p> <p><a href="#"><u>SC.912.L.16.10</u></a> Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues.</p> <p><a href="#"><u>SC.912.L.17.20</u></a> Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.</p> <p><a href="#"><u>SC.912.L.17.15</u></a> Discuss the effects of technology on environmental quality.</p> <p><a href="#"><u>SC.912.L.17.18</u></a> Describe how human population size and resource use relate to environmental quality.</p>
<p><b>Quarter 2: October 13, 2022- December 22, 2022</b></p>	
<p>Topics</p>	<p>Benchmark/ Standards</p>
<p>Biodiversity (4.3,10.1,10.2,10.3)</p> <p>Biomes and Aquatic Ecosystems</p>	<p><a href="#"><u>SC.912.L.15.3</u></a> Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction.</p> <p><a href="#"><u>SC.912.L.17.13</u></a> Discuss the need for adequate monitoring of environmental parameters when making policy decisions.</p> <p><a href="#"><u>SC.912.L.17.8</u></a></p>

<p>(CH 6, 7)</p> <p>The Atmosphere and Climate Change (CH 13)</p>	<p>Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.</p> <p><a href="#"><u>SC.912.L.17.7</u></a> Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.</p> <p><a href="#"><u>SC.912.L.17.4</u></a> Describe changes in ecosystems resulting from seasonal variations, climate change and succession.</p> <p><a href="#"><u>SC.912.E.7.9</u></a> Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water.</p> <p><a href="#"><u>SC.912.L.17.16</u></a> Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.</p> <p><a href="#"><u>SC.912.L.17.13</u></a> Discuss the need for adequate monitoring of environmental parameters when making policy decisions.</p> <p><a href="#"><u>SC.912.E.7.7</u></a> Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change.</p> <p><a href="#"><u>SC.912.E.7.9</u></a> Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water.</p> <p><a href="#"><u>SC.912.L.17.4</u></a> Describe changes in ecosystems resulting from seasonal variations, climate change and succession.</p> <p><a href="#"><u>SC.912.L.17.8</u></a> Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.</p>
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**Quarter 3: January 9, 2023- March 23, 2023**

Topics	Benchmark/ Standards
<p>Water Resources (CH 11)</p> <p>Air (CH 12)</p> <p>Toxicology (CH 20)</p>	<p><a href="#"><u>SC.912.L.17.19</u></a> Describe how different natural resources are produced and how their rates of use and renewal limit availability.</p> <p><a href="#"><u>SC.912.E.7.8</u></a> Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively.</p> <p><a href="#"><u>SC.912.L.17.20</u></a> Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.</p> <p><a href="#"><u>SC.912.L.17.14</u></a> Assess the need for adequate waste management strategies.</p> <p><a href="#"><u>SC.912.L.17.16</u></a></p>

<p>Waste Management (CH 19)</p>	<p>Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.  <a href="#">HE.912.C.1.7</a>          Analyze how heredity and family history can impact personal health.  <a href="#">SC.912.L.14.6</a>          Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health.</p>
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**Quarter 4: March 27, 2023- May 26, 2023**

Topics	Benchmark/ Standards
<p>Land Management (CH 14)</p> <p>Nonrenewable and Renewable Energy (CH 17, CH 18)</p>	<p><a href="#">SC.912.L.17.4</a> Describe changes in ecosystems resulting from seasonal variations, climate change and succession.</p> <p><a href="#">SC.912.L.17.10</a> Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle.</p> <p><a href="#">SC.912.L.17.11</a> Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.</p> <p><a href="#">SC.912.L.17.12</a> Discuss the political, social, and environmental consequences of sustainable use of land.</p> <p><a href="#">SC.912.L.17.13</a> Discuss the need for adequate monitoring of environmental parameters when making policy decisions.</p> <p><a href="#">SC.912.L.17.15</a> Discuss the effects of technology on environmental quality.</p> <p><a href="#">SC.912.L.17.19</a> Describe how different natural resources are produced and how their rates of use and renewal limit availability.</p> <p><a href="#">SC.912.L.17.20</a> Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.</p> <p><a href="#">SC.912.E.6.6</a> Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies.</p>

**SC.912.L.14.6**

Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health.