

Content/Academic Language							
FLDOE	carnivore community conservation of energy conservation of mass	consumer decomposer deforestation desertification	diversity ecosystem energy environment	food chain habitat heat herbivore	heterotroph nonrenewable resource organism photosynthesis	pollution producer renewable resource species	
Other	carrying capacity emigration immigration	interaction invasive species limiting factor latitude	Longitude non-native ozone parameter	policy reservoir runoff	salinity succession Sustainability topography	trophic climate change greenhouse effect	food web biodiversity biotic abiotic

Next Generation Sunshine State Standards	Complexity Level	Student Target
Topic 1: Matter & Energy in Ecosystems		
SC.912.L.17.9 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 (parent benchmark on Biology 1 EOC assessment).	Moderate	<ul style="list-style-type: none"> describe the roles of producers, consumers and decomposers in different ecosystems discuss the interactions among organisms in a food web trace the movement of energy through various trophic levels in an ecosystem explain why only 10% of the energy in a trophic level is available to the next level
SC.912.E.7.1 Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon (assessed as SC.912.L.17.9 on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> explain the movement of matter and energy through the carbon cycle and the water cycle identify carbon & water reservoirs on the Earth analyze, predict and evaluate the pathways taken by carbon and water through ecosystems explain the role of photosynthesis and cellular respiration in the carbon cycle & the water cycle
Topic 2: Factors Affecting Populations		
SC.912.L.17.2 Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature (assessed as SC.912.L.17.5 on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> explain that different types of organisms exist within aquatic systems due to: <ul style="list-style-type: none"> light chemistry (pH, oxygen, carbon dioxide, nitrogen, phosphorus, and salinity) geography (water depth, latitude, temperature, underwater topography, & proximity to land) describe how changes in these conditions may affect the distribution of life
SC.912.L.17.4 Describe changes in ecosystems resulting from seasonal variations, climate change and succession (assessed as SC.912.L.17.5 on Biology 1 EOC assessment).	Moderate	<ul style="list-style-type: none"> describe the potential changes to an ecosystem resulting from seasonal changes, climate changes, and succession (i.e., a disturbance such as a forest fire allows organisms to colonize open areas)

		<ul style="list-style-type: none"> ● explain how seasonal variation (i.e., species hibernate, migrate, or die during tough conditions) and climate change (i.e., species must change their habitat or lifestyle) can impact organisms within an ecosystem
SC.912.L.17.8 Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species (assessed as SC.912.L.17.5 on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● identify consequences that result from a reduction in biodiversity, such as: <ul style="list-style-type: none"> ○ increased vulnerability of species extinction ○ ecological imbalance ○ reduced sources of food, materials, medicinal resources, etc. ○ increased environmental monitoring & conservation efforts ● predict the impact of these changes on ecosystems
SC.912.L.17.5 Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity (parent benchmark on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● recognize that carrying capacity is the number of individuals in a population that a particular ecosystem can sustain ● discuss how the number of births, deaths, immigrants, & emigrants affect population size ● identify the biotic and abiotic factors that affect an ecosystem's carrying capacity <ul style="list-style-type: none"> ○ discuss how organisms compete for living and non-living resources ○ recall that symbiotic relationships and predator-prey relationships affect the carrying capacity of a population ● analyze a change in carrying capacity and its effect on population size in an ecosystem ● predict population changes using data related to limiting factors
SC.912.N.1.1 Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: pose questions about the natural world, conduct systematic observations, examine books and other sources of information to see what is already known, review what is known in light of empirical evidence, plan investigations, use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), pose answers, explanations, or descriptions of events, generate explanations that explicate or describe natural phenomena (inferences), use appropriate evidence and reasoning to justify these explanations to others, communicate results of scientific investigations, and evaluate the merits of the explanations produced by others (parent benchmark on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● identify test variables, outcome variables, and controlled variables ● design and/or evaluate a scientific investigation using evidence of scientific thinking and/or problem solving ● collect, organize, and analyze data ● predict outcomes based on prior knowledge, observations, and/or research ● justify conclusions
Screenshot		
Topic 3: Human Impact		
SC.912.L.17.11 Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests (assessed as SC.912.L.17.20 on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● discuss the benefits of renewable resources, such as: <ul style="list-style-type: none"> ○ wide availability ○ low pollution ○ available for the foreseeable future ● describe the costs of renewable resources, such as: <ul style="list-style-type: none"> ○ unreliable supply ○ often produced in small quantities ○ often difficult to store ○ per unit cost of energy is high ● discuss the benefits of nonrenewable resources, such as: <ul style="list-style-type: none"> ○ reliable supply

		<ul style="list-style-type: none"> ○ readily available ○ easy to store ○ per unit cost of energy is low ● describe the costs of nonrenewable resources, such as: <ul style="list-style-type: none"> ○ emissions which cause global warming, acid rain, and air pollution ○ health threats (i.e., lung diseases)
SC.912.L.17.20 Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability (parent benchmark on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● discuss the impact of human consumption on environmental systems ● examine how human activities affect sustainability
**SC.912.L.17.16 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 (not assessed on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● discuss how human activities and natural events can have profound effects on populations, biodiversity, and ecosystem processes
HE.912.C.1.3 Evaluate how environment and personal health are interrelated (not assessed on Biology 1 EOC assessment).	N/A	<ul style="list-style-type: none"> ● explain how environmental impacts affect human health (i.e., air pollution & asthma)
SC.912.L.17.13 Discuss the need for adequate monitoring of environmental parameters when making policy decisions (assessed as SC.912.L.17.20 on Biology 1 EOC assessment).	High (Reg Only)	<ul style="list-style-type: none"> ● recognize that adequate monitoring of environmental parameters is critical to the enforcement of laws, environmental standards, accountability, and environmental protection ● discuss how monitoring data is necessary for making informed management decision
**SC.912.N.2.4 Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability (not assessed on Biology 1 EOC assessment).	High	<ul style="list-style-type: none"> ● explain that as more information is gathered through investigation, our understanding of nature changes to incorporate that information ● discuss how scientists' understanding of human impact on the environment has changed over time

