

Course: 7<sup>th</sup> Grade/Comp.Sci.III

Course Code: 2002070

Quarter: 4

July 2012

[RESOURCES](#)

[COMMON CORE](#)

[SCIENCE CENTER](#)

[SYLLABUS](#)

**Topic(s) of Study:** DNA and Modern Genetics

**Bodies of Knowledge:** Life Science

**Big Ideas(s):** Heredity and Reproduction (Unit 9), Interdependence (Unit 10)

**Essential Questions:** What is DNA? (9-1) How does biotechnology impact our world? (9-2)

What components make up an ecosystem? (10-1), How does energy flow through an ecosystem? (10-2), How do organisms interact? (10-3) How do limiting factors affect Florida's ecosystems? (10-4)

Vocabulary: DNA, nucleotide, replication, mutation RNA, ribosome, biotechnology, artificial selection, generic engineering, clone, ecology, biotic factor, abiotic factor, population, species, community, ecosystem, habitat, niche

Common Inquiry Labs:

- **SC.7.L.16.1** Mutations Cause Diversity Fusion Lab Manual page 437 (9-1)
- **SC.7.L.16.4** Matching Codes Fusion Lab Manual page 445 (9-2)
- **SC.7.L.17.1** Pyramid of Energy Fusion Lab Manual page 469 (10-2)
- **SC.7.L.17.2** Measuring Species Diversity Fusion Lab Manual page 475 (10-3)
- **SC.7.L.17.3** How Do Disturbances Affect an Ecosystem Fusion Lab Manual page 484 (10-4)

	<b>Technology Links:</b>	
<p><b><u>Lab Assistance:</u></b></p> <p><a href="#"><u>Scientific Methods Skills</u></a></p> <p><a href="#"><u>Writing in the Sciences</u></a></p> <p><a href="#"><u>Cooperative Learning Activities</u></a></p>	<p><b><u>Science Links:</u></b></p> <p><a href="#"><u>Vocabulary Strategies</u></a></p> <p><a href="#"><u>Graphic Organizers and Reading Strategies</u></a></p> <p><a href="#"><u>Fold Notes</u></a></p> <p><a href="#"><u>Rubrics and Integrated Assessments</u></a></p> <p><a href="#"><u>Test Taking Strategies</u></a></p>	<p><b><u>Science Fair Assistance:</u></b></p> <p><a href="#"><u>Math in Science</u></a></p> <p><a href="#"><u>Planning for Science Fair and Competitions</u></a></p>

**Teacher's Links to Online Guides:**

[\*\*Above Level\*\*](#)

[\*\*On Level\*\*](#)

[\*\*Below Level\*\*](#)



<p>relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism. (10-3)  <b>Cognitive Complexity: Moderate</b></p> <p><b>SC.7.L.17.3</b> Describe and investigate various limiting factors in the local ecosystems and their impact on native populations, including food, shelter, water, space, disease, parasitism, predations, and nesting sites (10-4)  <b>Cognitive Complexity: High</b></p>	<p>organization in an environment</p> <p><b>Habitat and Niche</b></p> <ol style="list-style-type: none"> <li>1. Explain what determines where a population can live.</li> <li>2. Compare and contrast habitat and niche.</li> </ol> <p><b>Roles in Energy Transfer (10-2)</b></p> <p><b>Producers</b></p> <ol style="list-style-type: none"> <li>1. Name life's energy source.</li> <li>2. Explain how producers get energy.</li> <li>3. Give examples of producers</li> <li>4. Define photosynthesis</li> </ol> <p><b>Decomposers</b></p> <ol style="list-style-type: none"> <li>1. Explain how decomposers get energy.</li> <li>2. Give examples.</li> <li>3. Describe their importance</li> </ol> <p><b>Consumers</b></p> <ol style="list-style-type: none"> <li>1. Explain how consumers get energy</li> <li>2. Compare and contrast types of consumers and identify examples of each.</li> </ol> <p><b>Food Chains and Webs</b></p> <ol style="list-style-type: none"> <li>1. Define food chain, food web</li> <li>2. Explain energy flow in a web and identify organisms in it.</li> <li>3. Infer the consequences of removing an organism from a food web.</li> </ol> <p><b>Interactions in Communities (10-3)</b></p> <p><b>Predation</b></p> <ol style="list-style-type: none"> <li>1. Define predator and prey.</li> <li>2. Explain how the abundance of a prey species affects the abundance of a predator species and vice versa.</li> <li>3. Identify adaptations that help predators and prey survive.</li> </ol> <p><b>Symbiosis</b></p> <ol style="list-style-type: none"> <li>1. Explain symbiosis.</li> <li>2. Distinguish among the three types of symbiosis.</li> </ol> <p><b>Competition</b></p> <ol style="list-style-type: none"> <li>1. State the reason competition occurs.</li> <li>2. List resources for which organisms compete</li> <li>3. Predict effects of competition for a resource.</li> </ol> <p><b>Florida's Ecosystems (10-4)</b></p> <p><b>Limiting Factors</b></p> <ol style="list-style-type: none"> <li>1. Explain how certain factors limit the size of a population.</li> </ol>	<p>transfer in an ecosystem. (I)</p> <ul style="list-style-type: none"> <li>• Describe the flow of energy in a food web and food chain.</li> <li>• Assess the effect of the removal of a population from a food web or ecosystems (primary, secondary and tertiary changes). (I, II)</li> <li>• Compare and contrast the benefits and limitations of food chains and food webs as models. (II)</li> <li>• Calculate and describe the available energy at each trophic level in an energy pyramid. (II)</li> <li>• Compare and contrast the relationships among organisms including mutualism, predation, parasitism, competition, and commensalism. (III)</li> <li>• Investigate how changes in the environment may influence the size, number, and/or diversity of organisms in a given area. (III)</li> <li>• Identify limiting factors (e.g., food, shelter, water, space, disease, parasitism, predation, and nesting sites) that contribute to the endangerment and extinction of native Florida organisms. (III)</li> <li>• Investigate and write to explain the factors that affect population changes in an ecosystem (e.g., geographic, physical or competition for resources: food, water, space, disease, parasitism, predator, nesting sites). (IV)</li> </ul>
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2. Provide examples of common limiting factors.

**Florida's Land Ecosystems**

1. Identify Florida's major land ecosystems.
2. Describe effect of limiting factors on native populations in Florida's land ecosystems.

**Florida's Freshwater Ecosystems**

1. Describe Florida major freshwater ecosystems.
2. Explain the effects of limiting factors on native populations in these ecosystems.

**Florida's Marine Ecosystems**

1. Describe Florida's major marine ecosystems.
2. Explain the effect of limiting factors on native populations in these ecosystems.