Grade 4
Competency Goal 1: The learner will make observations and conduct investigations to build an understanding of
animal behavior and adaptation.
Objectives
1.01 Observe and describe how all living and nonliving things affect the life of a particular animal including
• Other animals
• Plants
• Weather
• Climate
1.02 Observe and record how animals of the same kind differ in some of their characteristics and discuss
possible advantages and disadvantages of this variation.
1.03 Observe and discuss how behaviors and body structures help animals survive in a particular habitat.
1.04 Explain and discuss how humans and other animals can adapt their behavior to live in changing
habitats.
1.05 Recognize that humans can understand themselves better by learning about other animals.

Competency Goal 4: The learner will conduct investigations and use appropriate technology to build an
understanding of how food provides energy and materials for growth and repair of the body.
Objectives
1.01 Explain why organisms require energy to live and grow.

Grade 5
Competency Goal 1: The learner will conduct investigations to build an understanding of the interdependence
of plants and animals.
Objectives
1.01 Describe and compare several common ecosystems (communities of organisms and their interaction
with the environment).
1.02 Identify and analyze the functions of organisms within the population of the ecosystem.
• Producers
• Consumers
• Decomposers
1.03 Explain why an ecosystem can support a variety of organisms.
1.04 Discuss and determine the role of light, temperature and soil composition in an ecosystem’s capacity to
support life.
1.05 Determine the interaction of organisms within an ecosystem.
1.06 Explain and evaluate some ways that humans affect ecosystems.
• Habitat reduction due to development.
• Pollutants
• Increased nutrients.
1.07 Determine how materials are recycled in nature.
Assignment 1

The student will create a poster depicting the roles of organisms and the flow of energy within an ecosystem.

See “Flow of Energy Rubric” (choice of two)

Assignment 2

The student will select one plant and one animal, illustrate each, and identify factors that affect the survival or extinction of the organisms such as adaptation, variation of behaviors (e.g. hibernation) and external features (e.g. camouflage and protection).

See “Adaptations Rubric” (choice of two)
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Weight for Each Category</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>X1 (up to 4 pts available)</td>
<td>Title is informative, centered, and larger than other text.</td>
<td>Title is informative and larger than other text.</td>
<td>Title is informative and centered.</td>
<td>The title is incomplete.</td>
</tr>
<tr>
<td>Labels</td>
<td>X2 (up to 8 points available)</td>
<td>Every item that needs to be identified has a label. It is clear which label goes with which plant or animal.</td>
<td>Almost all items (90%) that need to be identified have labels. It is clear which label goes with which plant or animal.</td>
<td>Most items (75-89%) that need to be identified have labels. It is clear which label goes with which plant or animal.</td>
<td>Less than 75% of the items that need to be identified have labels OR it is not clear which label goes with each plant or animal.</td>
</tr>
<tr>
<td>Accuracy</td>
<td>X3 (up to 12 points available)</td>
<td>Every plant and animal is clearly identifiable and its role in the habitat is described</td>
<td>Most of the plants and animals are identifiable and some of their roles in the habitat are described</td>
<td>Some of the plants and animals are identifiable. Their roles in the habitat are unclear.</td>
<td>Less than half of the plants and animals are accurate</td>
</tr>
<tr>
<td>Knowledge Gained</td>
<td>X3 (up to 12 points available)</td>
<td>The flow of energy is depicted clearly, with numerous examples.</td>
<td>The flow of energy is depicted clearly, with 2-3 examples.</td>
<td>The flow of energy is depicted clearly, with one example.</td>
<td>The flow of energy is not clear.</td>
</tr>
<tr>
<td>Spelling</td>
<td>X2 (up to 8 points available)</td>
<td>All words are spelled correctly in the title, labels and caption/description.</td>
<td>All common words are spelled correctly in the title, labels &amp; description. 1-2 scientific words may be misspelled.</td>
<td>75% of the words are spelled correctly in the title, labels &amp; description.</td>
<td>Fewer than 80% of the words are spelled correctly in the title, labels &amp; description.</td>
</tr>
</tbody>
</table>
Flow of Energy Rubric

Name ______________________________ Date __________________

Poster is neat, both drawings and writing.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

Plants and animals included in poster are clearly labeled.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

Plants and animals are easily identifiable.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

The beginning of the flow of energy is clearly depicted.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

The flow of energy is clear throughout the poster.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

The role of each plant or animal is clearly illustrated.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

Scientific language is used in descriptions.

Observer ____________________________ Investigator ____________________________ Expert ____________________________

KEY: Observer=5 pts., Investigator=10 pts., Expert-15 pts.  Your total _______
# Adaptation Rubric

**Student’s Name:** __________________________

<table>
<thead>
<tr>
<th></th>
<th>Beginning 1</th>
<th>Developing 2</th>
<th>Accomplished 3</th>
<th>Exemplary 4</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Illustration of Plant</strong></td>
<td>Plant is drawn with little or no details or labels</td>
<td>Plant is drawn clearly, with 2-3 labels and details</td>
<td>Plant is drawn clearly, with 4-6 labels and details</td>
<td>Plant is drawn clearly, with more than 6 labels and details</td>
<td></td>
</tr>
<tr>
<td><strong>Illustration of Animal</strong></td>
<td>Animal is drawn with little or no details or labels</td>
<td>Animal is drawn clearly, with 2-3 labels and details</td>
<td>Animal is drawn clearly, with 4-6 labels and details</td>
<td>Animal is drawn clearly, with more than 6 labels and details</td>
<td></td>
</tr>
<tr>
<td><strong>Description of Plant</strong></td>
<td>Plant adaptations are not listed or those listed are incorrect</td>
<td>One plant adaptation is listed and/or is correct</td>
<td>2-3 plant adaptations are listed and/or are correct</td>
<td>More than 3 plant adaptations are listed and are correct</td>
<td></td>
</tr>
<tr>
<td><strong>Description of Animal</strong></td>
<td>Animal adaptations are not listed or those listed are incorrect</td>
<td>One animal adaptation is listed and/or is correct</td>
<td>2-3 animal adaptations are listed and/or are correct</td>
<td>More than 3 animal adaptations are listed and are correct</td>
<td></td>
</tr>
<tr>
<td><strong>Over quality of Assessment</strong></td>
<td>Drawings and writing are messy, unorganized, and difficult to read and understand</td>
<td>Drawings and writing are somewhat neat and easy to read</td>
<td>Drawings and writing are neat, organized, and easy to read</td>
<td>Drawings and writing are exceptionally neat, detailed, organized, and easy to read</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL:**

**Teacher’s Comments:**
Adaptation Rubric

Name ________________ Date ________________

One plant and one animal are identified,

Observer  Investigator  Expert

One plant and one animal are illustrated.

Observer  Investigator  Expert

One plant and one animal are described

Observer  Investigator  Expert

Animal adaptations necessary for survival are described.

Observer  Investigator  Expert

Plant adaptations necessary for survival are described.

Observer  Investigator  Expert

Animal behaviors necessary for survival are described.

Observer  Investigator  Expert

External features of plants necessary for survival are described.

Observer  Investigator  Expert

KEY: Observer=5 pts., Investigator=10 pts., Expert=15 pts.  Your total ______
Begin K-W-L matrix for producers, consumers, and decomposers (provided)

**Activity**

**Part 1**

- What are the roles of producers, consumers, and decomposers in a community?
  
  1. Students will select one producer and one consumer from Georgia’s Amazing Coast.
  2. Students will work in collaborative groups to complete a “Frayer Model Organizer for Producers / Consumers” for each organism.
  3. Students will complete their Frayer models and place them on a bulletin board divided into sections labeled: producers, consumers, and decomposers.
  4. Class will brainstorm a list of decomposers to add to last section and discuss their roles in the ecosystem.
  6. Ticket out the Door: students name one of each: producer, consumer, and decomposer.

- How do changes in the environment affect a community (ecosystem)?

**Part 2**

1. Teacher reads the book The Lorax by Dr. Seuss.
2. Teacher reads pages from Georgia’s Amazing Coast: Longleaf Pine, Eastern Indigo Snake, and Gopher Tortoise.
3. Complete a graphic organizer worksheet comparing the truffulla tree community to the longleaf pine community.
4. The students will complete a cause & effect chart using the examples from The Lorax.

**NOTE:** This part of the activity can be supplemented with the Longleaf Pine habitat powerpoint included on the CD. The Longleaf Pine habitat can be compared to White Cedar habitat of northeastern NC.

**Part 3**

In groups of 2-4 students, have students use Georgia’s Amazing Coast to construct a food chain with at least 5 different organisms (they can supplement organisms in book with organisms that they are familiar with (e.g. krill that are eaten by whales).

- How does energy flow through a food chain / web?

- What would happen to a population if some of the plants or animals in the community became scarce, or if there were too many?

- How do organisms become extinct?
  
  1. Students play “Coastal Marsh Survivor Game” (included on CD).
  2. Discuss the cause and effects of the population situations after each scenario.
How do external features of organisms help them to survive and reproduce? (e.g. camouflage, use of hibernation, protection, etc.).

1. Students choose four plants/animals from Georgia’s Amazing Coast.
2. Students complete Plant/Animal Survival graphic organizer illustrating and explaining survival features.
### Producers, Consumers, and Decomposers

<table>
<thead>
<tr>
<th>-K- I think I know...</th>
<th>-W- I want to know...</th>
<th>-L- I learned...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Frayer Model Organizer of producers / consumers

Description:

Organism

Characteristic:

Examples:

Drawing: