Grade 5 Life Science Unit (5.L.2)

Decision 1: What will students learn in this unit?

Standards Addressed:
Science Ecosystems-5.L.2
1. Science: Ecosystems 5.L.2
2. Reading Informational Text: RI 5.8, RI 5.1, RI 5.3
3. Math: 5.G.1
5. Technology: 5.TT.1.1, 5.TT1.2
6. Other

Essential Question? How are plants and animals interdependent in an Ecosystem?

<table>
<thead>
<tr>
<th>Know</th>
<th>Understand</th>
<th>Do</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.L.2.1 – Essential</strong> Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands.</td>
<td><strong>5.L.2.1</strong> Students will understand that ecosystems are characterized as terrestrial or aquatic. Terrestrial ecosystems can be compared based on climate, soil conditions, and types of organisms. Aquatic ecosystems can be compared based on water types (e.g., saltwater, freshwater, or brackish), water depth, amount of sunlight, and types of organisms.</td>
<td><strong>5.L.2.2 – Essential</strong> Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).</td>
</tr>
<tr>
<td><strong>5.L.2.2 – Essential</strong> Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).</td>
<td><strong>5.L.2.2</strong> Students understand that organisms in an ecosystem function as producers, consumers, or decomposers. <strong>5.L.2.3 Students understand factors that affect one population in an ecosystem may impact other populations in that ecosystem.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>5.L.2.3 – Essential</strong> Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Decision 2: Assessment

Plan for how students will indicate learning and understanding of the concepts in the unit. How will you assess learning?

Possibilities/options:
- Pre-assessment
- Short answer tests or quizzes
- Student logs, journals and informal writing
- Lab activities
- Formal writing assignments
- Informal or formal student Interviews, conferences, observations etc.
- ClassScape Assessments

Describe the performance, product, or project that will be the culminating activity for the unit.

The student’s assignment for the Culminating Activity includes:

- **Unit** essential question or “I Can” statement for the culminating activity.
- A thorough **description** of the activity including steps or task **analysis** in completing the culminating activity.
- A copy(ies) of the rubric(s) you will use to assess the culminating activity or any other aspects of the unit.
## Decision 2: Assessments – PowerPoint Assessment on Biome

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Vague information on climate or water conditions.</td>
</tr>
<tr>
<td>Climate/Conditions Slide</td>
<td>Does not include temperature or precipitation amounts.</td>
</tr>
<tr>
<td></td>
<td>Does not include water.</td>
</tr>
<tr>
<td>Plant Adaptations</td>
<td>Lists plants, but does include adaptations.</td>
</tr>
<tr>
<td>Animal Adaptations</td>
<td>Lists animals, but does include adaptations.</td>
</tr>
<tr>
<td>Resources</td>
<td>Two resources. Websites are hyperlinked.</td>
</tr>
</tbody>
</table>
## Decision 3: Student Learning Map

### Key Learning Targets:

| 5.L.2.1 | Students will understand that ecosystems are characterized as terrestrial or aquatic. Terrestrial ecosystems can be compared based on climate, soil conditions, and types of organisms. Aquatic ecosystems can be compared based on water types (saltwater, freshwater, or brackish), water depth, amount of sunlight, and types of organisms. |
| 5.L.2.2 | Students understand that organisms in an ecosystem function as producers, consumers, or decomposers. |
| 5.L.2.3 | Students understand factors that affect one population in an ecosystem may impact other populations in that ecosystem. |

### Concept:

**Biotic/Abiotic Factors**

5.L.2.2

**Energy Flow**

5.L.2.2  5.L.2.3

**Types of Ecosystems**

5.L.2.1  5.L.2.2

### Lesson EQ(s):

**Lesson Essential Question(s):**

- How are the components of an ecosystem classified?
- How do you classify the biotic factors in an ecosystem?
- How does energy flow through an ecosystem?
- How do terrestrial ecosystems compare?
- How do aquatic ecosystems compare?

### Vocabulary:

- biotic
- abiotic
- species
- community
- environment
- organism
- deforestation
- biologist
- adaptation
- food chain
- food web
- energy pyramid
- primary consumer
- secondary consumer
- top consumer
- producer
- consumer
- decomposer
- carnivore
- herbivore
- omnivore
- terrestrial
- deciduous forest
- tropical rainforest
- grassland
- desert
- aquatic
- fresh water
- salt water
- brackish
- lake
- pond
- ocean
- estuary
- salt marsh

### Concept:

**Interconnected Relationships**

5.L.2.3

**Why is it important for ecosystems to be balanced?**

**Vocabulary:**

- Prey
- Competition
- Niche
- Symbiosis
- Habitat
- Mutualism
- Endangered
- Commensalism
- Extinct
- Parasitism

### Concept:

**Vocabulary:**
Decision 4: Launch Activities

Hooks and Links
Develops student interest and links prior knowledge. Provides the Student Learning Map and the key vocabulary to students.

Guiding Questions:
1. How are you going to get students engaged?
2. How are you going to develop student interest and link their prior knowledge?
3. How are you going to start the Student Learning Map of the unit with students?
4. How are you going to preview key vocabulary with students?

1 and 2: Play Family Feud game as an activator. (Resource Attached)
Family Feud

Play Millionaire Game as an anticipation activity. (Resource Attached)
Ecosystem-Who Wants to Be a Millionaire

3: Student Learning maps are prepared by the teacher and distributed to each student as a unit guide and resource.

4: Password Game. Find template online and insert the key terms for one student to describe and the other student to guess.
Decision 5: Acquisition Lesson One

Language Objective(s), where appropriate:

Lesson Essential Question(s) or “I Can” Statement(s):
I can identify biotic and abiotic factors in an ecosystem.
I can identify individuals, populations, and communities in an ecosystem.

Activating Strategies: (Learners Mentally Active)
- Biotic and Abiotic factors sort in smartexchange
- Acceleration/Previewing: (key vocabulary)

Teaching Strategies: (Explain and Model; Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers)
- T-chart for biotic/abiotic-make by folding paper landscape style and labeling, Frayer Models for producer, consumer, and decomposer. Inverted Pyramid Organizer for individual, populations, communities.
- Take students outside to explore the environment around the school. Students will record things they observe in their journals. Guide students to write a mixture of living and nonliving things they observe. Students will record their observations on a t-chart labeled as living and non-living.
- After observing for a few minutes, return to the classroom. Students will work in collaborative pairs to discuss their observations. Ones will tell Twos what living things they observed. Twos will tell Ones what non-living things they observed. Give students time to discuss and come to a consensus on their lists.
- Teacher will ask the class if there were any disagreements when discussing their observations. If so, give students the opportunity to share with the class. If few disagreements were discussed, the teacher can pose a question like: Would you considered a twig on the ground to be a living or non-living object? Ones can tell Twos their answer and the teacher can call on a Two to share with the class. If sunlight, water, and soil are not mentioned in the discussion, make sure the teacher includes these as examples of non-living items and guides students in understanding why they are considered to be non-living.
- Following discussion, the teacher will introduce the vocabulary abiotic and biotic. Options for vocabulary include a tri-flap foldable (including term, definition, and example) or a Frayer model for each vocabulary term.

Summarizing Strategies: Learners Summarize and Answer Essential Questions
Teacher will project a picture of an ecosystem (can be found in textbook or online) and have students list at least five biotic and three abiotic factors observed in the picture. Students will also write a paragraph explaining how they decided to classify the items.

Lesson Resources
- Smartboard, Elmo, Paper, pencil, clipboards, models of Frayer map or graphic organizers.
Decision 5: Acquisition Lesson Two

Language Objective(s), where appropriate:
RI.5.8, RI.5.1 (Inference and Author use of detail to support evidence)

Lesson Essential Question(s) or “I Can” Statement(s):
I can explain how all the organisms in an ecosystem are interconnected.
I can read a text to find the answer to answer to a question through inferring.

Activating Strategies: (Learners Mentally Active)

Balance Food Web Game
Give the kids cards with name of each name of each animal. You will need 1 hawk, 1 snake, 12 Rabbits, 8 Producers.
Use slide 1 to pass out the appropriate number of cards in a balanced ecosystem. Then advance to slide 2, after slide 2 you will need to add students or take away to demonstrate the upset of balance in the ecosystem.

Acceleration/Previewing: (key vocabulary)

Teaching Strategies: (Explain and Model; Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers)

Have the students read Mystery of St. Matthew’s Island in the Reading Street basal by Scott Foresman. The students will complete a graphic organizer/T-Chart in which they used evidence from the text to make inference. At key points they stop and evaluate their inference based on new information from the text.

Distributed Guided Practice/Summarizing Prompts: (prompts designed to Initiate Periodic Practice or Summarizing)

Summarizing Strategies: Learners Summarize and Answer Essential Questions
Have the students make a final inference and support the inference with details provided from the author in the text.

Lesson Resources
Basal, Cards for animals in the food web game, power point of the balance food web game, paper, sample graphic organizer.
## Decision 5: Acquisition Lesson Three

### Language Objective(s), where appropriate:

<table>
<thead>
<tr>
<th>Language Objective(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

### Lesson Essential Question(s) or “I Can” Statement(s):

<table>
<thead>
<tr>
<th>Question(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can compare the characteristics of several common ecosystems.</td>
</tr>
</tbody>
</table>

### Activating Strategies: (Learners Mentally Active)

<table>
<thead>
<tr>
<th>Strategy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gather 6 of each color M &amp; M. Throw the M&amp;M’s on into the grass and have the children have a relay to retrieve the M &amp; M’s. The students will graph the M &amp; M’s found and determine what would be a good color for a bug with few defenses to be in our ecosystem. In contrast to the camouflage students can also learn about color warning as an adaptation.</td>
</tr>
</tbody>
</table>

### Teaching Strategies: (Explain and Model; Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers)

<table>
<thead>
<tr>
<th>Strategy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have the students create their own ecosystem by establishing the climate for their “invented ecosystem”. They will use a combination of precipitation amounts and temperatures from the grasslands, temperate deciduous forest, desert, and the rainforest. The students will include the animals and plants that will flourish in their ecosystem along with their adaptations. The students will be given a week to complete the assignment and select their own method to present their ecosystem.</td>
</tr>
</tbody>
</table>

### Summarizing Strategies: Learners Summarize and Answer Essential Questions

<table>
<thead>
<tr>
<th>Question(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-facts on Deciduous Forest</td>
</tr>
<tr>
<td>2-facts on Grasslands</td>
</tr>
<tr>
<td>1-Fact on Rainforest</td>
</tr>
</tbody>
</table>

### Lesson Resources
### Decision 5: Acquisition Lesson Four

**Language Objective(s), where appropriate:**

| RI 5.8, RI 5.3 |

**Lesson Essential Question(s) or “I Can” Statement(s):**

| I can explain how all the organisms in an ecosystem are interconnected. |

**Activating Strategies: (Learners Mentally Active)**

| Do a Smart Sort or a Venn Diagram on Man-Made vs. Naturally occurring changes that impact an ecosystem. Several items fall under both. |

| Acceleration/Previewing: (key vocabulary) |

**Teaching Strategies: (Explain and Model; Collaborative Pairs; Distributed Guided Practice; Distributed Summarizing; Graphic Organizers)**

| Read the Story *The Lorax* by Dr. Seuss. Have the students add to their diagram or list items for the Smartboard sort. Have the students answer the questions for the Lorax that is attached. |

| *Lorax Quiz* |

| Distributed Guided Practice/Summarizing Prompts: (prompts designed to Initiate Periodic Practice or Summarizing) |

**Summarizing Strategies: Learners Summarize and Answer Essential Questions**

| Have the students look at other factors that impact an ecosystem and have them create a character that is an advocate for that issue. |

**Lesson Resources**

| The Lorax, Smartboard, paper, pencil |
**Decision 6: Extending Thinking Activities**

Include extending activities for several lessons in the essential units.

<table>
<thead>
<tr>
<th>Cause/Effect</th>
<th>Compare/Contrast</th>
<th>Deduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justification</td>
<td>Induction</td>
<td>Analyzing Perspective</td>
</tr>
<tr>
<td>Error Analysis</td>
<td>Abstracting</td>
<td>Evaluation</td>
</tr>
<tr>
<td>Classifying</td>
<td>Constructing Support</td>
<td>Writing Prompt</td>
</tr>
</tbody>
</table>

*Decision 6 - Extended Thinking Activities*
Decision 7: Differentiating the Unit

What accommodations will you make in order to meet the varied interests, learning styles, and ability levels of all students?

<table>
<thead>
<tr>
<th>choice menus</th>
<th>compacting</th>
<th>grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>seating</td>
<td>visual, auditory, kinesthetic activities</td>
<td>scaffolding</td>
</tr>
<tr>
<td>real world meaning</td>
<td>interests</td>
<td></td>
</tr>
</tbody>
</table>
Decision 8: Unit Calendar

Determine the most viable sequence for the experiences, activities, and lesson and create a timeline.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.L.2.1.</strong> Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands.</td>
<td>2 Weeks</td>
</tr>
<tr>
<td><strong>5.L.2.2.</strong> Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).</td>
<td>2 Weeks</td>
</tr>
<tr>
<td><strong>5.L.2.3.</strong> Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.</td>
<td>2 Weeks</td>
</tr>
</tbody>
</table>
Decision 9: Resources

Provide graphic organizers, links, book titles, websites, etc. that provide support for teaching this unit.
**Unit Designers:**

**Date:** 1/22/13

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sally Hale</td>
<td>Clear Creek</td>
</tr>
<tr>
<td>Anita Woods</td>
<td>Clear Creek</td>
</tr>
<tr>
<td>Emily Inman</td>
<td>Dana</td>
</tr>
<tr>
<td>Kim Brown</td>
<td>Atkinson</td>
</tr>
<tr>
<td>Kristin Garrett</td>
<td>Fletcher</td>
</tr>
<tr>
<td>Heather Kennedy</td>
<td>Fletcher</td>
</tr>
</tbody>
</table>