

Grade: 5

Title: All about Ecosystems

Kimberly Clopton

Student Learning Objective(s): The students will identify and describe ecosystems and its importance. The students will identify abiotic and biotic factors that work together in an ecosystem.

LA GLE's

Grade: 5 # 26: Students will identify and describe ecosystems of local importance.

Grade: 5 # 27: Compare common traits of organisms within major ecosystems.

Materials needed:

Learning logs

Colors/ Markers

1 poster (students poems)

Scissors

Different ecosystem models brought in by the teacher

Examples of needed poems

Different color paper for the students to write their poems on

Detailed Procedure. Describe what the students will do in each stage. Include guiding questions you might ask to help students.

1. Engage:

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

- Observation Classification Communication Measurement Estimation Prediction Inference
 Identifying Variables Controlling Variables Defining Operationally Forming Hypotheses
 Experimenting Graphing Modeling

1. Have you ever turned over a rock or a log and looked under it? **Some yes and some no.**
2. What did you find under the rock? **Answers will vary.**
3. How would you describe the soil under the rock or log? Is it different from the surrounding soil not under the rock? **Soil under the rock or log is moist. The surrounding soil is drier than the soil under the rock. May explain that the sun cannot go through (penetrate) the rock or log, that is why the soil is moist.**
4. If we go outside and turn over a big rock, do you think we would find the same animals and plant life under the rock as we would the area surrounding the rock? **Answers will vary; discuss the reasons behind the students' answers.**
5. For those that have turned over a rock or log how would you describe what's going on under that rock or log? Or those that have not what do you imagine you would see if you did so? **Answers will vary according to what they saw when they looked under the rock or log or what they think they will see.**
6. Is there any type of comparison we could compare to what is going on under the rock or log to everyday life? **Answers will vary accordingly: a community, people (animals) working together, everything has a role as in having a job.**
7. Name some of the natural parts of the Earth's systems. **Answers will vary. Can accept plants, flowers, animals, soil, air, water, winds, nutrients, etc...**

(*These questions are an assessment to see if the children are familiar with ecosystems.)

2. Explore:

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

- Observation Classification Communication Measurement Estimation Prediction Inference
 Identifying Variables Controlling Variables Defining Operationally Forming Hypotheses
 Experimenting Graphing Modeling

1. The students will be divided into four groups.
2. Each group will observe and describe 1 of the 4 ecosystems brought in by the teacher.
***The 4 ecosystems will be found in the following areas: under a big rock, pond water, inside a tree, and grass and soil. Pictures of where their ecosystems came from will be given to the students. (The ecosystems may also be manipulated by the teacher to contain more things for students to observe.)**
3. The students will discuss their observations with the members of their group.
4. The students will write their observations in their learning log.
5. The students will be guided to look for specific things or answer specific questions about their ecosystem.

1. What animals or plants are found in your ecosystem?

2. Name ways in which the living and nonliving animals are working together in the

ecosystem.

3. Where was your ecosystem found?

4. Create a diagram of how the living and nonliving things in your ecosystem work together.

6. The groups will take turns introducing their findings about their ecosystem to the class and how they think the abiotic (nonliving) and biotic (living) species work together.

****Teachers can have students explore different ecosystems on the internet instead of bringing in mini ecosystems****

3. Explain:

Outline the line of questioning you will use to assist students in understanding the concept. List at least 5 good questions and identify the question category (Gallagher & Aschner) in which your question falls (see text, Figure 7.6).

1. Compare your ecosystem with an ecosystem presented by your fellow classmates. **Answers will vary depending on which group they chose to compare with.**
2. Discuss some living and nonliving things in your ecosystem and how they are connected within your ecosystem. (Teacher will introduce the term abiotic and biotic to students) **Answers will vary. Some may say that the animals live off the water or soil. Animals may feed on the other animals. (Listen for important things said by the students involving the characteristics of an ecosystem.)**
3. Identify factors that are not seen, but play an important role in your ecosystems survival. **Oxygen and Carbon dioxide. Other answers may apply also.**
4. What are some things that may affect the environment of your ecosystem? **Answers will vary. Cutting down trees, killing animals, small amounts of rain, etc...**
5. What can you do to keep your ecosystem intact? **Answers will vary. Some children may say do not disturb the ecosystem.**

4. Expand:

Science Process Skills *Indicate which science process skills students will develop in this part of the lesson.*

- Observation Classification Communication Measurement Estimation Prediction Inference
 Identifying Variables Controlling Variables Defining Operationally Forming Hypotheses
 Experimenting Graphing Modeling

1. The students will create a poem within their group about the ecosystem they studied.
2. The groups will randomly choose which type of poem they will present.
3. The choices of the poems will be: cinquain, concrete, diamante, and acrostic. The students will be shown an example of each poem so that they know what the poem should consist of.
4. The students will share their poems with the class.
5. The students will create a poster consisting of their poems to display in the class.

5. Evaluate:

What exactly will you do, or what evidence/data will you collect, to ascertain whether the students can achieve the objectives you listed at the top of this lesson?

1. The students will be assessed as they answer the questions during the explain phase of the lesson.
2. The students will be assessed as they explain the details about their ecosystem. The teacher will determine if they are considering all the factors presented within the ecosystem.
3. Poems can be assessed for content accuracy and poetic form.

Brain Compatible Learning Strategies Used in This Lesson:

- Brainstorming/Discussion Drawing and Artwork Field Trips Games Graphic Organizers
 Humor Manipulatives, Experiments, Labs, Models Metaphors, Analogies, and Similes
 Mnemonic Devices Movement Music, Rhythm, Rhyme, and Rap Project/Problem-Based Instruction
 Reciprocal Teaching, Cooperative Learning Role Plays, Drama, Pantomimes Storytelling
 Technology (student use) Visualization/Guided Imagery Visuals Writing/Journals

Lesson Source:

American Forest Foundation. (2009, 2008, 2007, 2006). Planet Diversity- Activity 9. Project Learning Tree: Pre K – 8 Environmental Education Activity Guide. p. 45.

Ecosystem Lesson Pictures



Picture taken by Kimberly C—this was a tree found at my house. I found ants, spiders, roaches, and roly polli's within. There were additional bugs also. I had two of these as the ecosystem. One was found in the tree and the other was found under the log.



Picture taken by Kimberly C



Picture taken by Kimberly C – This was a random spot in my yard. I found ants, worms, and rolli polli's here. I did manipulate this ecosystem a bit by adding in a cricket and additional worms in which I bought.



Picture taken by Kimberly C—this picture was taken behind the levee in Brusly, La. We found amazing things in the water. There were water bugs, water sticks, tadpoles, small crayfish, and other unidentifiable animals. For my next class, I added a frog I brought from the store.



Picture taken by Kimberly C