

The College at Brockport: State University of New York Digital Commons @Brockport

Lesson Plans

CMST Institute

7-17-2006

Organisms and the Concept of Dynamic Equilibrium

Erin Gwara
The College at Brockport

Follow this and additional works at: http://digitalcommons.brockport.edu/cmst_lessonplans



Part of the [Physical Sciences and Mathematics Commons](#), and the [Science and Mathematics Education Commons](#)

Repository Citation

Gwara, Erin, "Organisms and the Concept of Dynamic Equilibrium" (2006). *Lesson Plans*. 268.
http://digitalcommons.brockport.edu/cmst_lessonplans/268

This Lesson Plan is brought to you for free and open access by the CMST Institute at Digital Commons @Brockport. It has been accepted for inclusion in Lesson Plans by an authorized administrator of Digital Commons @Brockport. For more information, please contact kmeyers@brockport.edu.

Generic Lesson Plan Template

You should submit this form in addition to any computer generated files/documents/models to your group folder on Angel. Please create a .zip file and upload the group of files as a single archive.

| |
|---|
| Name: Erin Gwara |
| Grade level(s)/Subject taught: Living Environment |
| Objectives: <ul style="list-style-type: none">• Students will understand the concept of energy pyramids and how energy decreases as you increase each level in the pyramid.• Students will know the type of organisms found in each level of the energy pyramid. |

Please provide a rich **one-page, single-spaced**, description or a *vision* of your best thinking on a way or ways you might teach the planned lesson. (approximately ½ page for the teacher role, ½ page for the student role). Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

- 1b. *Write* the Science Concept or “key idea” that modeling will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).

| |
|--|
| Key Idea: Organisms maintain a dynamic equilibrium that sustains life. |
|--|

Materials:

Index cards with different organisms written on each
Smart board
Computers with internet connections
Worksheet for energy pyramids

“...a rich **one-page, single-spaced**, description or a *vision* of your best thinking...”

Prompts:

1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions)
4. How will you assess the learning for the lesson?

Using the website http://www.gould.edu.au/foodwebs/kids_web.htm I plan on having my students manipulate different organisms in four different food webs by determining if they are producers, consumers, decomposers, and where they are located on an energy pyramid.

When students come in, there will be an index card laid out on their desk, with an organism on it. The index cards will be colored, and each color will represent a different food web. Student will have instructions written on the overhead for them to read. They will find the other students with their matching color of index card and determine the order of organisms in their food chain. Once they have done this, they will write this down and then label the organisms according to if they are a producer, consumer, decomposer, herbivore, carnivore, omnivore, predator, and prey.

This will take approximately 10 minutes. Students will report out as groups in order for me to check for understanding. They will have already learned about the different roles of organisms in the ecosystem, plus what a food chain and web is. They need to learn their prior knowledge of living things and what their niche is in the environment, in order to put the food chain in the correct order.

Once the students have reported out, I will model, on the overhead, how to turn a food chain into an energy pyramid. Students have already learned about what an energy pyramid was, how they look, and the rule of energy loss as you move up each level in the pyramid. This activity, turning a food chain into an energy pyramid, is what the students will be doing online.

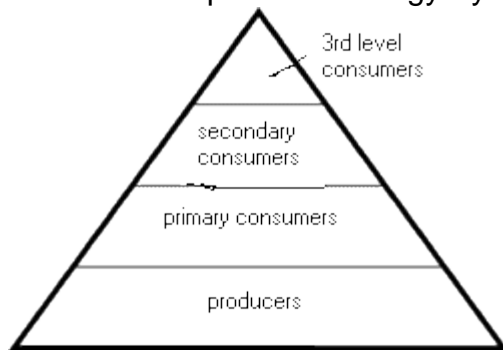
The worksheet needed for the computer activity is already on their desk, and I explain to them what they will be doing. In a perfect world, if I had a smart board, I would go to the website so they could see what they will be doing in the computer lab. I would start the first energy pyramid with them, on the smart board, and then we would head to the computer lab for them to do independent work.

Once at the website, http://www.gould.edu.au/foodwebs/kids_web.htm, the students will go to one of four food webs and try to determine where each organism goes in the energy pyramid. If they put the animal in the wrong spot, they are given a clue to help them determine where it goes. The students will fill in their worksheet as they go along, plus answer some questions related to the activity and ecology.

To assess the learning of the lesson, the students will not only hand in their worksheet, but they will have a ticket out the door—they have to create their own food chain/web and turn it into an energy pyramid.

Name _____

1. Go to the following website: http://www.gould.edu.au/foodwebs/kids_web.htm
2. Click on one Food Web and try and figure out where the animals and plants go in that Food Web, using the clues and your knowledge of biology.
3. When you have solved the Food Web, draw below, the Energy Pyramid of that Food Web, making sure you have at least one organism in each level of the pyramid. *Also label each organism as a producer, consumer, decomposer, carnivore, herbivore, omnivore, predator or prey.*
4. Finished with that Food Web? Go on to another, and keep going until you have done all four Food Webs.
5. Answer the questions at the end of the sheet.
6. Here is an example of an Energy Pyramid. You must create your own.



Australian Grasslands

African Grasslands

Antartic

Marine

Answer the following questions:

- What type of organisms make up the bottom level of the pyramid?
- What happens to the energy of the pyramid, as you go from bottom to top?
- In a food web or chain, where does ALL the energy come from?
- What would happen if one level of the energy pyramid or one link in the food chain was to go extinct? Explain by using an example.

TICKET OUT THE DOOR: CREATE YOUR OWN FOOD WEB/CHAIN WITH AT LEAST 4 ORGANISMS, AND TURN THAT WEB/CHAIN INTO AN ENERGY PYRAMID. LABEL YOUR ORGANISMS AS PRODUCER, CONSUMER, DECOMPOSER, ETC.