# Ecology Web Lesson Plan

Goal: To gain an appreciation of how different organisms depend on each other in an eco-system.

This is an interactive lesson to reveal the connections in an ecosystem. This lesson is based upon the teaching "An In-Class Role-Playing Activity to Foster Discussion and Deeper Understanding of Biodiversity and Ecological Webs" by Loren B. Byrne. (http://docs.rwu.edu/fcas_fp/81/)

The goal of the lesson is that students will gain a better understanding about how different species in an ecosystem interact. Since we are in Seattle, we will use a organisms from the Pacific Northwest.

List of materials:
1 worksheet/student
1 notecard/student
tape
colored pencils
2 large sheet of paper or classroom board (for making the web)
markers (for making the web)

1) At the board we will ask the students what is an ecology or food web? Hopefully they will give some answers. In the end we are looking for a figure showing "what-eats-what".

2) Break into groups so we have UW student/group. Do a short example with your group with hawk, snake, mice, meadowlark, grasshopper, grass, sun. (this will be provided in the worksheet). Arrows will point to the "eater".
    a) Things you can discuss. Why is the sun included?
    b) What happens when you take out the grass?
    c) Is this ecology web complete? Does it include all organisms and energy sources?

3) Next we tell them we are now going make bigger food webs and they are the going to be the organisms. Each of you will get a card that you need to fill out. What do you think is the important information you will need to put on the card? (what I eat, who eats me). There are 24 cards. If there are not 24 students, tutors should take a card. Below is an example of the front and back side of the cards.

4) The cards are labeled with the organism's scientific name. You can ask the students why we give organisms scientific names. It helps us identify them. e.g. There are three different types of banana slugs.
5) They will fill out the card by doing research on the computer. They should be instructed to search on Google and good sites include Wikipedia and also www.whateats.com. There are lots of interesting facts they can explore (e.g. the huckleberry is not native to North America, the Douglas Fir is NOT a fir tree, etc.)
6) Once all cards are filled out, to make things more fun, we can do a competition to see which team completes their web first. Each student can put the common name of their organism on the large sheet of paper next to the scientific name. Then, using the notecards, they must talk with each other to find out where to draw the connections. Below are the list of animals.

| Team A | Team B |
|---|---|
| 1) dead leaf<br>2) banana slug (*Ariolimax columbianus*)<br>3) douglas fir (*Pseudotsuga menziesii)*<br>4) red tree vole (*Arborimus longicaudus*)<br>5) spotted owl (*Strix occidentalis)*<br>6) Douglas squirrel *(Tamiasciurus douglasii)*<br>7) red-tailed hawk (*Buteo jamaicensis)*<br>8) bacteria (saprotroph)<br>9) fisher (*Martes pennanti)*<br>10) huckleberry (*Vaccinium parvifolium*)<br>11) tiger salamander (*Ambystoma tigrinum)*<br>12) sun | 1) Douglas Fir (*Tamiasciurus douglasii)*<br>2) blackberry (*Rubus armeniacus)*<br>3) vagrant shrew (*Sorex vagrans)*<br>4) sooty grouse (*Dendragapus fuliginosus)*<br>5) fisher (*Martes pennanti)*<br>6) chinook salmon (*Oncorhynchus tshawytscha)*<br>7) northern flying squirrel (*Glaucomys sabrinus)*<br>8) fungus (armillaria solidipes)<br>9) American marten (*Martes americana)*<br>10) Black bear (*Ursus americanus)*<br>11) stonefly (*Pteronarcyida*e)<br>12) sun |

When they have finished, each team will choose one (or two) animals and present the facts on the card and its connections to the other team.

When they are presenting, ask the students- what would happen to the food chain if this particular organism no longer existed?

If there is time we can repeat the exercise. Two decks of cards will be prepared.