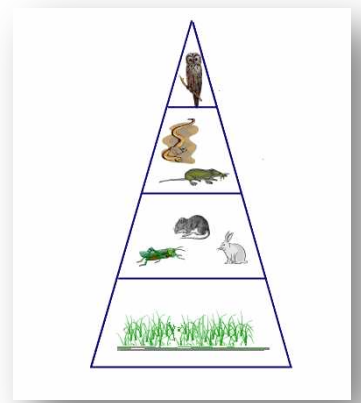




# Folded Food Pyramids

## Activity

Ecological pyramids model show the transfer of energy through trophic (feeding) levels in an ecosystem. The energy pyramid shows the decreasing amount of available energy from one trophic level to the next. A numbers pyramid represents the decreasing population size from the broad based producers to the tip of the apex consumers. To show the flow of energy from one trophic level to the next, a biomass pyramid is used.

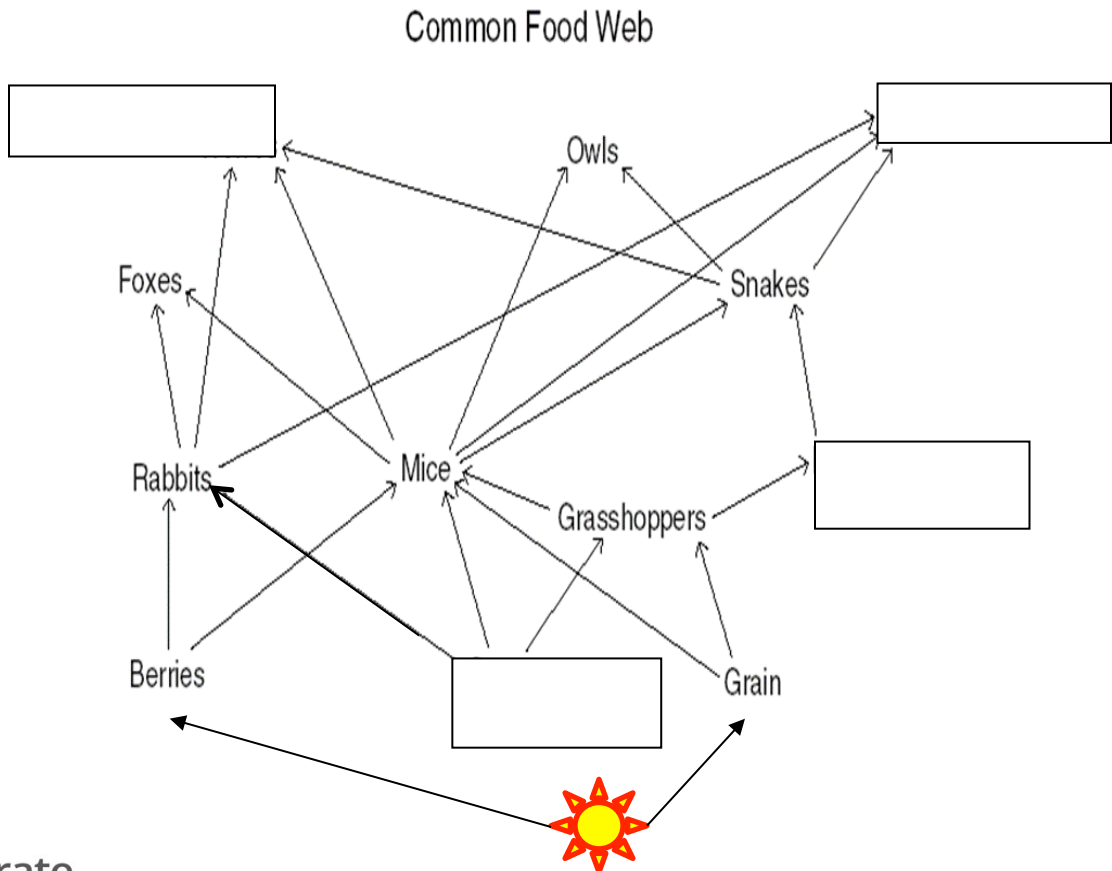


## Procedure:

### Part 1

- Below is a diagram of a food web.
- Complete the food web by selecting organisms from the lists (remember the arrow points toward the one who is eating!)
- Write a brief description of a food web in your own words.

**Organisms within the Food Web:** \* Hawk \* Frogs \* Wolves \* Grass





# Folded Food Pyramids

## Activity, continued

Description of Food Web:

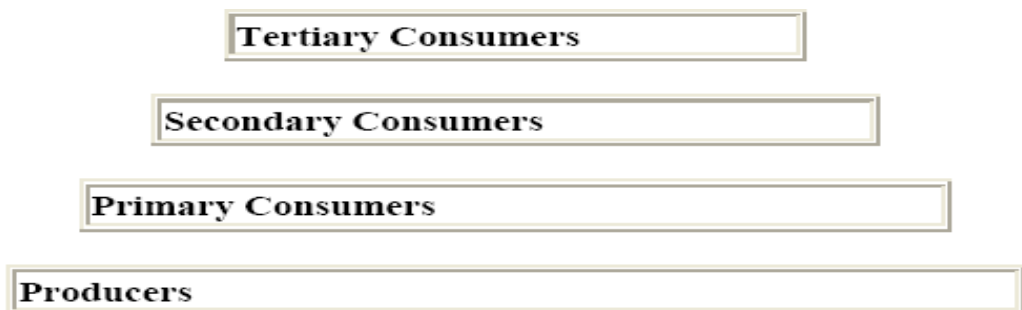
### Part 2

Vocabulary Review:

Use the food web from the previous page to help fill in the concept chart below.

Term	Definition (what they eat)	Example
Autotrophs/Producers	Produce their own food	
Herbivore		Rabbits
Omnivore	Eats plants and animals	
Carnivore		Foxes
Decomposers	Breaks down dead tissue	Bacteria (not shown in food web on previous page)

A **food pyramid**, or ecological pyramid, will show population sizes (amount of energy at that level) in an ecosystem. The pyramid most often decreases, as it gets farther up. Example:





## Folded Food Pyramids

### Activity, continued

However, a **food chain** is a single path through the different levels of energy transfer.

Example: Sun → Grass → rabbit → fox → decomposer (upon the death of the fox)

Using organisms in the common food web above, list at least two examples of members of the following population examples:

Producers:

Primary consumer:

Secondary consumer:

Tertiary consumer:

### Part 3

Using the common food web above, write out one possible **food chain** from the example.

Sun → Producer → primary consumer → secondary consumer → tertiary consumer

\_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_

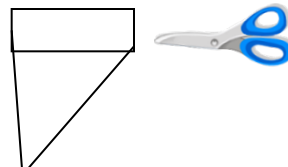
### Part 4

Using the materials provided by your teacher (paper, scissors, tape, markers, etc.), construct a three-dimensional **Ecological Energy Pyramid**.

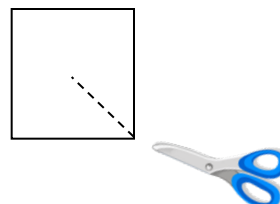
1. Obtain a piece of colored paper.



2. Fold one side of the paper to create a triangle, cut the top portion off so that you have a square piece of paper.



3. Fold your square from corner to corner, so that the crease makes an X across your square.

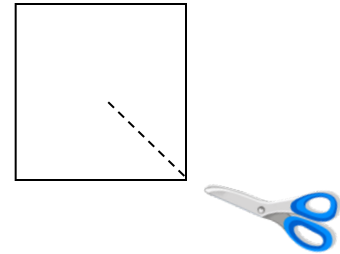




## Folded Food Pyramids

### Activity, continued

4. Make a cut from the corner of one square to the middle of the square.
5. Fold one side of your cut piece over the adjacent side so that you see a three-sided pyramid (see teachers example and the picture below.) One side will be hidden (you may want to mark an X on the side that will be hidden.) DO NOT TAPE side yet. You will need to draw on the three exposed sides of your triangle before taping it.
6. For the next several steps, you will use the organisms from the food chain example that you wrote in Part 1 on Page 2.



7. On each of the three exposed sides of the pyramid, divide the pyramid into four trophic levels.
8. On one side, label the four trophic levels (producers, primary consumers, secondary consumers, tertiary consumers). The level with the most energy goes on the bottom. Represent this by 100% on the bottom level. Label the other three trophic levels appropriately. (Only 10% of the energy moves up to the next level during energy transfer.) This is the energy pyramid. On the bottom of the pyramid draw a picture of the Sun to show the beginning of the energy transfer.



9. On the second side of the pyramid, draw the organism found on each trophic level from your food chain example on Page 3. (What organism was at that level??) Add an estimated number to represent how many of each organism that would be needed to support the trophic level above. This is your numbers pyramid.
10. On the third side, give the numeric value for each trophic level. If the bottom level is 10,000 kilograms, what are the other three levels? This side of the pyramid represents your biomass pyramid. (This expresses the total amount of organic matter in each trophic level.)
11. Once you have completed the steps, tape your pyramid together so that it stands on its own with the three-labeled sides visible.