Ecology Flip Book

Energy Transfer

1) You will be creating an Ecology Flip Book to show your knowledge about ecological sciences. You will be adding pages to your flipbook each day at your own pace. Remember each page should be TOP notch work…don't be surprised if you are asked to redo a page if it does not meet your teacher's expectations. Do it right the first time!

    a. Obtain a blank sheet of paper and label it "Ecology". This will be the title page to your flip book. At the top of the page define Ecology.

2) Find a computer station and visit the following website:
http://www.globalcommunity.org/flash/wombat.shtml

Watch the brief (humorous) video. What's the main idea the Wombat is trying to convey to us? Below your definition of ecology, in your own words describe the "BIG IDEA" behind ecology.

The purpose of the flip book assignment is to show you the interconnectedness (yes that's a word) of life! Each entry to your book seeks to help you understand each branch of ecology and how each branch works together to make earth, and its organisms, thrive.

3) Obtain the article titled **FOOD CHAINS, FOOD WEBS AND ECOLOGICAL PYRAMDS.** You will use this article as reference for the next 5 pages of your flip book.

4) Read Section 1 of the article.

5) Obtain a blank sheet of paper and label it "Organisms in a Habitat." On top of the worksheet, neatly define heterotroph and autotroph. In addition, obtain the savanna habitat picture and glue it below the definitions.

6) In BLUE, circle the autotrophs. In RED, circle the heterotrophs. In ORANGE, circle the consumers. In GREEN, circle the producers. *Include a key for each color used.*

7) Below the savannah picture, describe in 2-3 sentences the relationship you observed between heterotrophs and consumers and autotrophs and producers.

8) Show the page to your teacher (for grading) before moving on to the next step.

9) Read Section 2 of the article.

10) Obtain a blank sheet of paper and label it "Energy Transfer Through a Food Web." Pick up the worksheet with the forest animals and follow the directions below:

a. Cut out the animal icons from the paper provided. You must use ALL of the icons – no fair making some members of the community disappear.

b. On your sheet of paper, organize the icons. Establish as many energy-transfer relationships as possible. If you are not certain if an organism might be someone else's food source, feel free to use your book and/or the Internet for research.

c. Using a straight edge (ruler), draw lines showing the energy transfer relationships on your paper. Remember: The arrowhead should point FROM the organism that being consumed TO the organism that is CONSUMING. *(Hint: There will be multiple lines going to and from each organism AND only 3 lines should come from the sun…)*

11) Show the page to your teacher (for grading) before moving on to the next step.

12) Obtain a blank sheet of paper and label it "Energy Pyramid". Below the title, give a definition for what an energy pyramid is.

13) Obtain the trophic level pyramid worksheet. Cut out the pyramid and glue it below your definition. (Leave room for some writing below the pyramid)

14) On the left side of the pyramid next to each trophic level, label each trophic level

15) Using the organisms from the savannah worksheet, place each organism's name into the appropriate trophic level. Be sure to include all **19** organisms.

16) Below the pyramid in 3-4 sentences, describe why the pyramid narrows towards the top. Use the words **trophic, energy, loss, 10%, and efficiency/efficient** in your response.

17) Show the page to your teacher (for grading) before moving on to the next step.

18) Find a computer station and visit the following website to PLAY THE GAME:

http://www.ecokids.ca/pub/eco_info/topics/frogs/chain_reaction/index.cfm

19) While at your computer station, watch the following *VIDEOS* (trophic cascade, act 1-3) found on class website (http://corse-scottsbiologyzone.weebly.com/ecology.html) or the following youtube link: http://www.youtube.com/watch?v=yg5ieYKvYI8)

20) Obtain a blank piece of paper and title it "TROPHIC CASCADE". Below your title, define trophic cascade. Below your definition, divide your page in half, titling the left side **Top-Down Effect** and the right side **Bottom-Up Effect**.

21) Using a food web of your choice, sketch/draw an example of a possible top-down and bottom-up effect under the appropriate headings for your food web. Give a brief explanation of what is occurring underneath each sketch/drawing.

22) Show the page to your teacher (for grading) before moving on to the next step.