

Title: Energy Pyramid Mobiles

Name: _____ Period: _____

Purpose: To build a model of the energy pyramid using organisms from the same biome.

Materials: textbook (Prentice Hall: Biology, pp 100-104), construction paper, glue, scissors, twine, colored pencils, mammal field guides, tree/bush field guides, insect field guides, internet

Procedures:

1. Using pages 100-104 in your book choose a biome you would like to create an energy pyramid for. You can also use the internet to help you. A great site is www.enchantedlearning.com/biomes.
2. Your mobile must contain 4 energy levels. Cut 4 strips of paper to represent each level on your mobile. The size of each level should represent the amount of energy available to organisms at that level. In other words if the strip of paper for your producers was 100 cm long your strip of paper for your primary consumers should be 10 cm long etc.
3. Neatly label each strip of paper by the energy level it represents in the food chain.
4. Label somewhere on your mobile which biome you have chosen.
5. Using your book, and the descriptions of your biome given, chose 4 producers, 3 primary consumers, 2 secondary consumers, and 1 tertiary consumer.
6. These organisms should include at least one full food chain. (hint: in other words at least one organism on each level eats the one below it)
7. Draw your food chain on the back of one of the strips.
8. You will need to draw each of these. If you do not know what they look like use the field guides provided to find pictures.
9. Neatly draw and label each organism.
10. Paste the organism on the appropriate energy level. (producers on the producer strip) You may also choose to hang them with some twine from the level where they belong.
11. Fold each strip into a triangle and attach triangle with twine.
12. Be able to answer the following questions:
 - a. Using the 3 arrows show where energy is lost and explain to me what form the energy is in that is lost.
 - b. What does each level represent on the pyramid?
 - c. Why did you make each triangle the size you did?
 - d. How would the number of organisms on the base level of your pyramid compare to the number of organisms on the top?
 - e. What might change these numbers (hint: think about size)

f. What is the ultimate source of energy for your pyramid? How would a decrease in this source affect the biome?

Scoring Guide:

All organisms are from the same biome-10 pts

Complete food chain included-10 pts

Levels are constructed according to the amount of energy available-10 pts

Color and Neatness-10 pts

Ability to answer discussion questions-16 pts