

Name _____ Period _____ Date _____

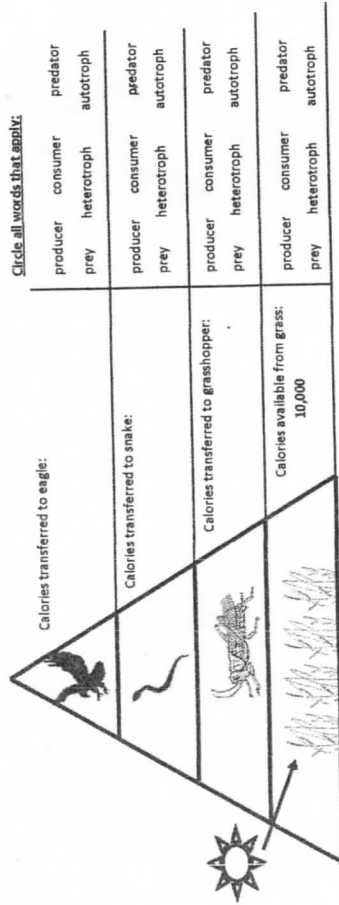
Energy through Ecosystems Worksheet

4. If only 10% of the energy from one trophic level passes up to the next level, what happens to the 90% energy that is *not* passed on?

The amount of available energy at each trophic (feeding) level decreases as it moves through an ecosystem. As little as 10 percent of the energy at any level is transferred up to the next level.

In the energy pyramid below, calculate the amount of energy that is passed up from one trophic level to the next, assuming only 10% of the energy from the previous level is available for the next level. For each trophic level, circle all the words that apply to identify each organism as either a producer or consumer and as either an autotroph or a heterotroph. If the organism could be considered a predator and/or prey, circle those words also.

5. Do you think a pyramid is a good shape to represent how matter and energy transfer in an ecosystem? Why or why not?



Circle all words that apply:

Questions

- Assume that the grasshopper in the food pyramid above must eat half its body weight in grass each day. If an average-size grasshopper weighs 2 grams, and 1 blade of grass weighs 0.1 grams (one tenth of a gram), how many blades of grass does the grasshopper need to eat each day?
- Assume a snake must eat 5 grasshoppers per day, while an eagle must eat 2 snakes per day. Use this information along with your answer from Question #1 to calculate how many blades of grass are needed to keep an eagle alive for a day?
- How many blades of grass are needed to support a family of four eagles for a week?

6. A full-sized cow needs about 100 square feet of pasture to graze on each day. Assume an average sized classroom is about 600 square feet. How many classrooms worth of pasture would be needed to keep a cow alive for a year?

7. Which trophic level do you think is the most important for the ecosystem and why?