

Principles of Ecology

Section 2.2 Flow of Energy in an Ecosystem

name the ultimate source of energy for Earth.

In a food chain, matter and energy move from autotroph to heterotroph to decomposer. A food chain is made of many steps; each organism in the food chain represents a step called a trophic level. An herbivore is a heterotroph that eats only plants, whereas a carnivore preys on other heterotrophs. An omnivore eats both plants and animals. Nutrients are returned to the soil, air, and water by detritivores. A model that shows all the possible feeding relationships at each trophic level is called a food web. If you were a scientist and you wanted to determine the weight of living matter at a certain trophic level, you would measure the biomass.

Classify each of the following organisms as an autotroph or a heterotroph. Put an A in front of those that are autotrophs and an H in front of those that are heterotrophs.

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|-------------------|-----------------------|-------------------|
| ___ 1. Alligator | ___ 5. Moss | ___ 9. Dandelion |
| ___ 2. Squirrel | ___ 6. Siberian tiger | ___ 10. Rabbit |
| ___ 3. Maple tree | ___ 7. Daffodil | ___ 11. Tomato |
| ___ 4. Whale | ___ 8. Rhinoceros | ___ 12. Cockroach |

autotroph
biomass
carnivore
decomposer
detritivore
food chain
food web
herbivore
heterotroph
omnivore
trophic level