

# Topic: Energy Flow in Ecosystems

## Learning Objective/Outcome:

Keywords/Questions	Notes
Where does most of the energy that fuels life come from?	The sun.
What is a producer?	An organism that makes their own food by using the sun's energy.
What is photosynthesis?	The process in which producers transform the sun's energy into food.
Explain the process of photosynthesis.	 <p>Chlorophyll containing organisms transform energy from the sun into glucose. Also requires carbon dioxide and water, and also produces oxygen.</p>
What is a consumer?	An organism that eats producers or other consumers for energy.
What is a primary consumer?	Organisms that eat only producers. Also known as herbivores.
What is a secondary consumer?	Organisms that eat primary consumers.
What is a carnivore?	Animals that only eat other animals.
What is an omnivore?	Organisms that eat both plants and animals.
What is a decomposer?	An organism that breaks down dead material for energy.
What is biomass?	The energy stored in once-living organisms.
How do decomposers help recycle biomass?	By breaking it down into energy-rich substances such as carbon, nitrogen, and phosphorus.
What is a food chain?	Energy passing from one organism to another in the form of food.

What indicates the direction of energy transfer?	Arrows.
What is an energy pyramid?	Compares the energy available at each level of the food chain.
What is 90% of energy organisms consumer used for?	Life processes or lost as heat.
How much energy is passed on to organisms at the next level?	About 10%.
Which organisms have the least amount of energy available?	Organisms at the top of the food pyramid.
Why do energy pyramids and food chains rarely have more than 4 levels?	Because the limited amount of energy available at higher levels would not be enough to sustain organisms at that level.
What is a food web?	A series of overlapping food chains that more completely model the flow of energy through an ecosystem. Can also model the variety of organisms in an ecosystem.
Describe a healthy food web.	An abundance of producers, many herbivores, and relatively few carnivores and omnivores. The balance helps the ecosystem maintain and recycle biomass.
Do food webs include decomposers?	Many food webs do not include decomposers, but they are present and essential in providing balance of energy flow of an ecosystem All organisms in a food web would have arrows pointing to decomposers.

**Summary**

Energy is passed through an ecosystem through a variety of organisms. Each organism has a unique role in maintaining a healthy ecosystem.