

Chapter 5 Section 1 Notes

Energy Flow in Ecosystems

Life depends on the Sun – the ultimate source of energy for almost all organisms on Earth is the Sun.

Photosynthesis – the process in which plants make sugar molecules from sunlight

From producers to consumers

- Producer – an organism that makes its own food; aka “a plant” (ex. oak tree)
- Consumer – an organism that gets its energy by eating other organisms
 - We have 4 different types of consumers:
 - herbivores – only eat plants (ex. rabbit, cow)
 - omnivores – eat plants and animals
 - carnivores – only eat animals (ex. coyote)
 - decomposers – a consumer that gets its food by breaking down dead organisms

Cellular Respiration: the process of breaking down food to yield energy

- occurs in the cell where glucose and oxygen produce carbon dioxide, water, and energy
- The energy consumed by organisms can be stored in fat and sugar molecules

An Exception: Deep-Ocean Ecosystems

- Deep ocean ecosystems do not receive any sunlight
- Deep ocean bacteria use hydrogen sulfide from thermal vents to make their food.

Energy Transfer

Food chain – a linear sequence showing how energy is transferred from one organism to the next

Food web – a diagram that shows the many feeding relationships possible in an ecosystem.

Energy Pyramids

- used to illustrate the loss of energy from one trophic level to the next
- Trophic levels stack together to form an energy pyramid
 - Lowest trophic level is made up of producers and has the most energy (ex. algae, grass)
 - Next trophic level is made up of herbivore consumers (ex. cows, grasshoppers)
 - Next trophic level is made up of omnivore consumers (ex. bears, pigs)
 - Highest trophic level is made up of carnivore consumers (ex. killer whales, lions)