The image features a stylized illustration of a terrarium. On the left, a portion of an orange terrarium with a light blue handle is visible. A light blue tube leads from the top of the terrarium down to a circular opening. Inside this opening, a green fern-like plant with several leaves is shown. Below the plant, there are stylized green hills and a blue mountain range. The background is divided into three horizontal bands: a dark blue top band, a yellow middle band, and a dark blue bottom band.

PRINCIPLES OF ECOLOGY

EDITABLE student notebook pages - digital links included for students to complete guided notes on Google Drive

Question: What is the main energy source for almost all ecosystems on Earth?

NUTRITION AND ENERGY

Ecology – study of the interactions among organisms and between organisms and their environment

Ecologists study the flow of energy through communities to discover nutritional relationships between organisms.

SUNLIGHT is the main energy source for life on Earth.

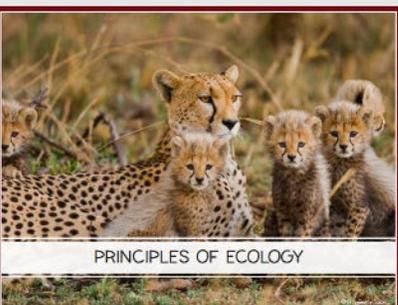
Autotrophs – organisms that use sunlight or energy stored in chemical compounds to make food, because they make their own food, they are **producers**

Photosynthesis
process used by autotrophs to make food energy from sun, plants, algae, cyanobacteria

Heterotrophs – organisms that rely on other organisms for energy and food supply, also called **consumers**

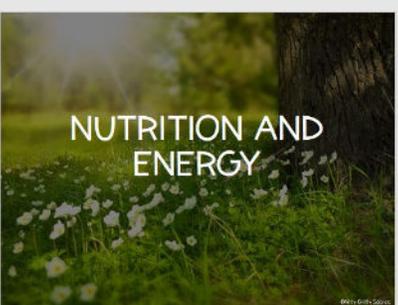
Heterotroph	Description
Herbivore	eats only plants
Carnivore	eat only animals
Omnivore	eat both plant and animal matter
Detritivore	eat plant and animal remains

Decomposers – break down organic matter



PRINCIPLES OF ECOLOGY

1



2

Photosynthesis

Process used by autotrophs to make food energy from the sun. Examples: plants, algae, cyanobacteria

5

Chemosynthesis

6

Ecology

Study of the interactions among organisms and between organisms and their environment

Ecologists study the flow of energy through communities to discover nutritional relationships between organisms.

SUNLIGHT is the main energy source for life on Earth.



3

Autotrophs

Organisms that use sunlight or energy stored in chemical compounds to make food. Organisms that make their own food are called **producers**.



4

Heterotrophs

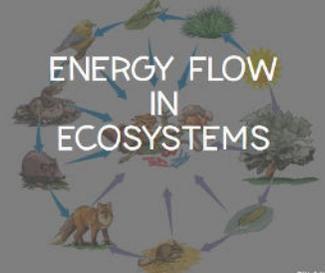
Organisms that rely on other organisms for their energy and food supply, also called **consumers**

Decomposers – break down wastes, organic matter (dead organisms) and return them to the ecosystem. Ex: bacteria & fungi

Heterotroph	Description	Examples
Herbivore	eats only plants	cows, caterpillars, deer
Carnivore	eat only animals	snakes, owls, sharks
Omnivore	eat both plant and animals	humans, bears, crows
Detritivore	eat plant and animal remains	worms, crabs, mites

7

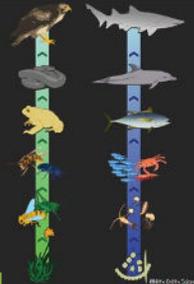
ENERGY FLOW IN ECOSYSTEMS



8

Food chains

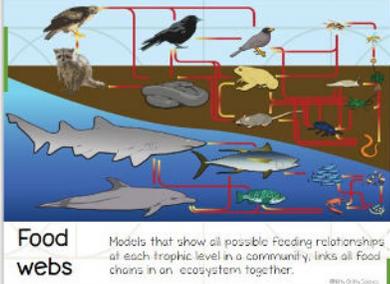
Each organism in a food chain represents a feeding step, or trophic level, in the transfer of matter and energy.



11

Food webs

Models that show all possible feeding relationships at each trophic level in a community, links all food chains in an ecosystem together.



12

EDITABLE PowerPoint presentations include high-resolution graphics and feature all topics and vocabulary covered in the notes

EDITABLE Chapter test includes multiple choice, fill in the blank, interpreting diagrams, & short Answers questions

Name _____
CHAPTER TEST PRINCIPLES
Multiple Choice
Choose the answer that best completes each statement

- 1. Which of the following is NOT part of the water cycle?
a. precipitation
b. transpiration
c. decomposition
d. evaporation
- 2. Nitrogen is recycled in the soil by
a. being fixed by bacteria
b. infiltration
c. runoff
d. lightning
- 3. Anything that is not living is called
a. biotic
b. living
c. abiotic
d. natural
- 4. _____ is the process by which organisms and their environment interact.
a. Tolerance
b. Symbiosis
c. Cycling
d. Succession
- 5. Carbon dioxide is removed from the atmosphere by
a. burning of fossil fuels
b. photosynthesis
c. combustion
d. all of the above
- 6. Starfish live in the intertidal zone of the ocean.
a. habitat
b. community
c. niche
d. population

Interpreting Diagrams

Use the diagrams to answer each question.



39. Suppose there were a large number of energy...

40. The relationship between...

41. Where does energy...

42. In the Food chain...

Choose TWO essays and answer the following questions.

43. Compare and contrast...

44. Explain why decomposers...

45. List and describe TWO...

- 28. The first species to populate an area where primary succession is taking place are called _____.
a. secondary species
b. primary species
c. pioneer species
d. succession species

Fill-in-the-blank

- Complete each statement with the correct vocabulary term.
- 29. Omnivores, carnivores, herbivores, scavengers, and decomposers are all _____.
 - 30. Parasitism, commensalism, and mutualism are examples of _____.
 - 31. Trophic level and Food chain are parts of a _____.
 - 32. Both the algae and the fungus are benefited from their relationship in a lichen. This relationship is one of _____.
 - 33. Energy that passes through a Food chain is lost to the environment as _____.
 - 34. To explain and show how the amount of living material at each trophic level of a Food chain changes, you could use a pyramid of _____.
 - 35. Wind, humidity, and rocks are all _____ in a terrestrial ecosystem.
 - 36. Bacteria and Fungi are known as _____ because they break down the remains of organisms.
 - 37. Certain bacteria change nitrogen gas into a usable form in a process called _____.
 - 38. The soil that is frozen all year in the tundra is called _____.

Answer key included – Images are blurred for copyright reasons



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