

Only about _____ percent of the energy available within one trophic level is transferred to organisms at the next trophic level when they are eaten.

1%

5%

10%

50%

100%

TYPES OF HETEROTROPHS

<u>TYPE</u>	<u>How does it get its energy?</u>	<u>Examples</u>
	absorbs energy by breaking down organic matter	
OMNIVORE		Humans, bears, crows
	Eat only plants	Cows, rabbits
	feed on dead plant and animal remains	Earthworms, snails, mites, Crabs,
CARNIVORE		

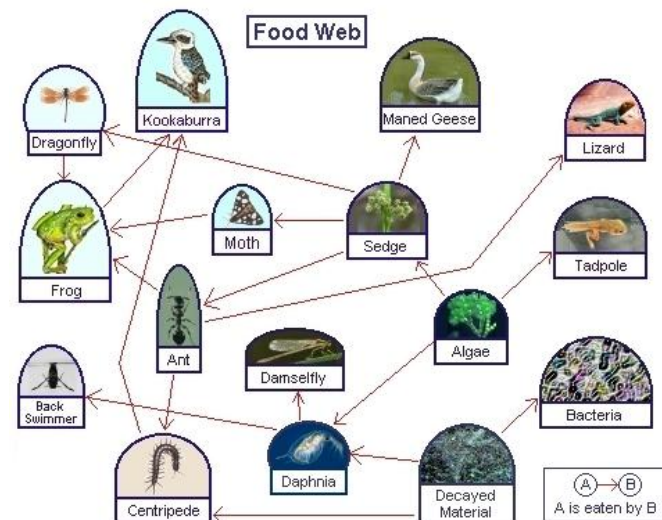
PUT THE FOLLOWING IN ORDER FROM LEAST TO MOST COMPLEX

BIOSPHERE	POPULATION	ECOSYSTEM	COMMUNITY	INDIVIDUAL	BIOME
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_____ → _____ → _____ → _____ → _____

TELL HOW A FOOD CHAIN IS DIFFERENT FROM A FOOD WEB

FOOD CHAIN	FOOD WEB



THINK ABOUT IT

Look at the food web below and answer the questions.

Name a producer in this food web

Name two primary consumers

Name a secondary consumer

THINK ABOUT IT:

What do you think will happen to the frog population in this community if all the centipedes were killed off by a disease?

A. it would increase

B. it would decrease

C. it wouldn't change... frogs don't eat centipedes

Name the 3 types of SYMBIOSIS

TYPES OF SYMBIOSIS	DESCRIPTION
	Relationship in which one organism benefits, but the other is neither helped nor harmed
	Relationship in which one organism benefits and the other is harmed in some way
	Relationship in which both organisms benefit

The _____ principle states that NO two species can occupy the same niche in the same habitat at the same time.

COMPARE AND CONTRAST

	RESOURCE	NUTRIENT
WAY THEY ARE DIFFERENT		
WAY THEY ARE ALIKE		

	BIOTIC FACTOR	ABIOTIC FACTOR
WAY THEY ARE DIFFERENT		
WAY THEY ARE ALIKE		

	NICHE	HABITAT
WAY THEY ARE DIFFERENT		
WAY THEY ARE ALIKE		

NAME THE CYCLE DESCRIBED:

- _____ Cycle in which photosynthesis and cellular respiration participate
- _____ Cycle that has no involvement in the atmosphere
- _____ Cycle which is dependent on bacteria for nitrogen fixation and denitrification
- _____ Cycle in which volcanic activity and burning fossil fuels plays a role
- _____ Cycle that requires bacteria to convert it from one form to another
- _____ Cycle which includes an underground reservoir in the form of fossil fuels

NAME THE STEP IN A BIOGEOCHEMICAL CYCLE:

_____ Process in which nitrogen gas from the atmosphere is converted into ammonia by bacteria that live in the soil and on the roots of plants called legumes

_____ Process in which soil bacteria convert nitrogen compounds in soil back into nitrogen gas which is released into the atmosphere

_____ Process in which sunlight is used to change atmospheric carbon into biomolecules used for energy by living things

_____ Process by which nitrogen gas is taken from the atmosphere

_____ Process in which nutrients in dead organisms are returned to the soil

_____ Process in which the break down of sugars in living things returns carbon to the atmosphere as CO₂

_____ Process of taking nitrogen compounds into living tissue

_____ Used in the formation of nucleic acids and proteins

Tell 2 human activities by which carbon can enter the atmosphere as CO₂ during the carbon cycle

What are autotrophs? Give examples. What are heterotrophs? Give examples.

What are two ways autotrophs make energy (photosynthesis and chemosynthesis)

What is a limiting factor? How does it affect a population?

What happens when an over abundance of a limiting factor becomes available?

Know how the three different pyramid types and how to read them.

What effects population growth?

What three things determine population size?

- A. Temperate Forest
- B. Tropical Savanna
- C. Boreal Forest
- D. Tundra
- E. Tropical Rain forest
- F. Temperate Grassland
- G. Desert

Biomes (Use with A-G)

1. Eastern United States, trees lose their leaves in the fall
2. Hot and very rainy, hosts a wide variety of plants and animals
3. Layer of permafrost, very cold
4. Very little rainfall, has cactus and reptiles
5. Has many conifers, moose, black bears and lynxes
6. Midwest United States, also called a prairie
7. A dry grassland in a warm area, where lions and giraffe are

Ecology – interpreting data

Food Web:

Identify the:

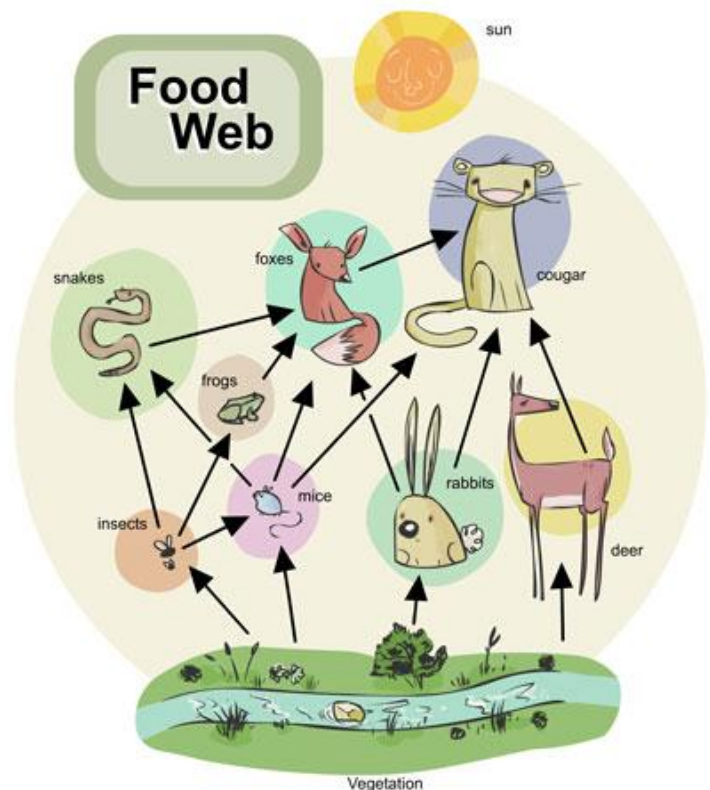
Producers _____

Consumers _____

Omnivores _____

Herbivores _____

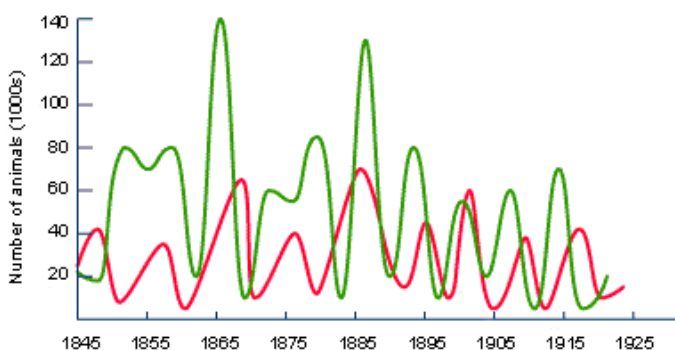
Carnivores _____



1. Consumes dead tissue or decaying organisms (aka decomposer)
2. Producers (organisms that make their own food) are also called:
3. Relationship where two or more species live in close association
4. The rule that no two species can occupy the same niche
5. The physical area in which an organism lives
6. The full range of physical and biological conditions that an organism needs to survive (its way of life)
7. Omnivores, herbivores and carnivores are all:
8. Population reproduces at a constant rate, creating a J shaped graph
9. Population growth slows after a period of exponential growth, creating an S shaped graph
10. The study of relationships between organisms and their environment
11. All the populations in an area make up this
12. A group of ecosystems that have the same climate and similar communities
13. The first species to move into a new area
14. The act of one organism feeding upon another
15. The number of individuals a habitat can support
16. Shows the population of a country broken down by gender and age group
17. Eats plants
18. Eats other animals
19. A particular type of tree that loses its leaves in the fall
20. Type of symbiosis where one individual is harmed.
21. An animal that eats both plants and animals
22. A series of changes that occurs in a community over time
23. All the organisms that live in a particular place, plus the nonliving components of their environment
24. Group of organisms of the same species in the same area
25. A particular type of tree that bears cones, has needle-like leaves, like an evergreen
26. An organism that gains its energy from feeding on other organisms

Word Bank

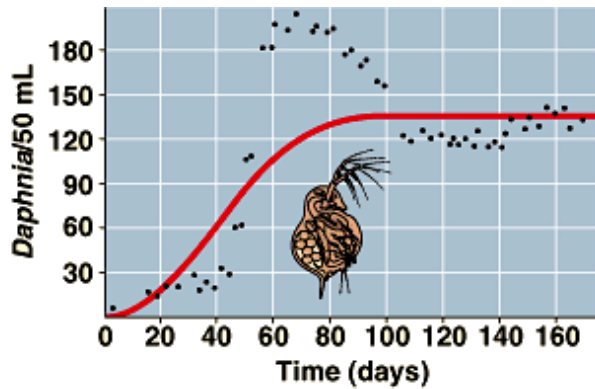
- A. Symbiosis
- B. Niche
- C. Detritivore
- D. Habitat
- E. Parasitism
- F. Consumers
- G. Coniferous
- H. Competitive Exclusion
- I. Community
- J. Ecosystem
- K. Heterotroph
- L. Logistic Growth
- M. Exponential Growth
- N. Pioneer Species
- O. Predation
- P. Autotrophs
- Q. Carrying Capacity
- R. Population
- S. Ecology
- T. Omnivores
- U. Carnivores
- V. Herbivores
- W. Succession
- X. Biome
- Y. Age structure diagram
- Z. Deciduous



In 1865, the rabbit population was very large, what happened to the cougar population as a result?

Population Growth Curve

1. What is the carrying capacity for daphnia? _____
2. During what time period was exponential growth observed? _____



Population Pyramid

1. Which country has the fastest growth?
2. In Western Europe, which age group has the largest population?

