3-1 and 3-2
Food Chains, Food Webs and Energy Flow
Pages 63-73

Objectives: Students will:

A) Define 7 words related to food webs and energy flow.

B) Compare energy flow and nutrient cycling in an ecosystem.

C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.

D) Summarize the energy flow at each trophic level in a food chain/web

B) Compare energy flow and nutrient cycling in an ecosystem.

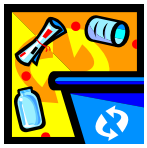
Energy Flow vs. Nutrient Cycling

Energy *flows through* ecosystems –

- 1. _____ via _____
- 2. _____ temporarily in _____ _____
- 3. _____ in the form of _____.

Nutrients *cycle within* ecosystems –

- 1. They are _____ (_____, _____, _____that _____ within the ecosystem
- 2. They are found at different _____ in different _____ of the system.
- 3. This is the law of _____. Matter is never _____ or _____, it is simply _____.



Obj. A) Define 7 words related to food webs and energy flow

Vocabulary Word	Link Word	Reminds me of?	Because
Autotroph or Producer			
Heterotroph or Consumer			
Decomposer			
Food Chain			

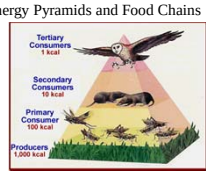
C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.

D) Summarize the energy flow at each trophic level in a food chain/web

What happens to the level of energy as you move through each trophic level?

Why do you think this happens?

Energy Pyramids and Food Chains



Energy Pyramid

Shows the relative amount of energy available at each _____level. Organisms use about _____ percent of this energy for _____ _____. The rest is lost as _____.

What percent of the energy transfers from one trophic level to the next?

For what two things is the other 90% used?

Obj. A) Define 7 words related to food webs and energy flow

Vocabulary Word	Link Word	Reminds me of?	Because
Food Web			
Trophic Level			
Energy Pyramid			

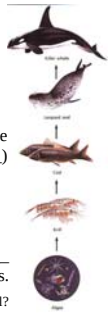
C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.

D) Summarize the energy flow at each trophic level in a food chain/web

Food Chains

_____ is transferred in a system from one organism to another. This transfer of energy from organism to organism makes up a _____

Each level of consumption is called a _____ _____ _____ are therefore in the _____ _____ level.



4. _____= who are eaten by… you get the idea.

3. _____= who are eaten by the _____ (_____)

2. _____= Next come the _____(_____)

1. _____= Photosynthetic_____ which range from single-celled bacteria to redwood trees.

At which trophic level is the highest level of energy found? Why do you think it is this level?

C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.
D) Summarize the energy flow at each trophic level in a food chain/web

Most of the sun's energy is reflected or absorbed by the atmosphere or Earth's surface.

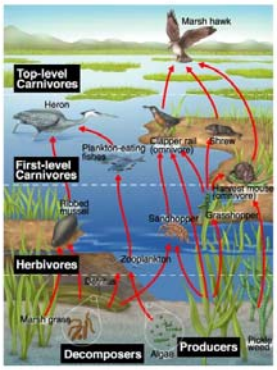
_____ of the energy sent by the Sun is available to life on Earth.
Of this energy, _____ is trapped by green plants or algae.
_____
_____

All life depends upon energy and _____
_____
_____

Only about _____ of the energy from one trophic level can get to the next one through consumption. The rest of the energy is lost as heat.

C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.
D) Summarize the energy flow at each trophic level in a food chain/web

The stability of an ecosystem depends on its number of _____ and _____.



Why are decomposers important to an ecosystem's stability?

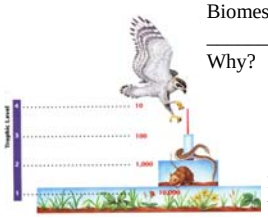
Why are producers important to an ecosystem's stability?

C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.
D) Summarize the energy flow at each trophic level in a food chain/web

Energy and the Food Chain

If _____of the energy can be transferred from one trophic level to the one above it, each trophic level must have _____ the energy as the one above it.

The number of _____depends upon the number of _____in the _____ trophic level.

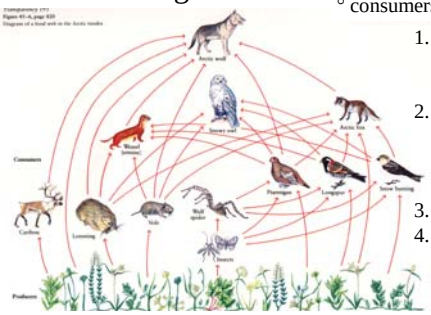


Biomes with _____ numbers of primary _____ have short food _____. Why?

In this diagram, which trophic level receives the lowest amount of energy?

Predict what would happen to this food chain if there was a large decrease in the number of mice.

Understanding Check



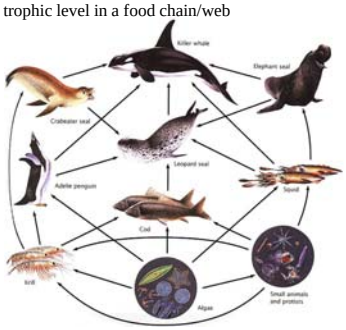
Identify producers, 1° 2 ° 3 ° & 4 ° consumers in this food web

1. A snowy owl, that eats a vole that eats plants is what?
2. An arctic fox that eats a Longspur that eats insects that eat plants is what?
3. The caribou?
4. The arctic fox that eats the ptarmigan that eats a wolf spider that eats insects that eats plants.

C) Summarize the relationship between producers, consumers, and decomposers in a food chain/web.
D) Summarize the energy flow at each trophic level in a food chain/web

What is a food web?

_____
_____
_____
_____



Most animals at _____ trophic levels occupy _____ trophic levels simultaneously because of _____ in their _____.

Understanding Check Questions

1. What are the two most important categories when it comes to the stability of a food web?
2. Why are the two that you identified in #1 so important?
3. What percentage of energy transfers from one trophic level to the next?
4. Identify the two reasons energy is lost as you move up an energy pyramid.
5. What happens to nutrients in an ecosystem?