
Do Now

What term do we use to talk about levels of consumers in an ecosystem?

Trophic
(Trophic)

Nutrition and Energy Flow (day 2)

10/6/10

Objectives

Content:

SWBAT

1. Define food chain and food web
 - a) Compare and contrast these terms too
2. Define trophic level
 - a) Explain why it is most energy efficient to eat lower on the trophic levels
3. Identify an organisms level in an Ecological Pyramid

Language:

By

1. Taking and applying notes
 2. Taking and applying notes
 3. Taking and applying notes
-

Agenda

1. Do Now
 2. Objectives
 3. Food Chains
 4. Food Webs
 5. Ecological Pyramids
 6. Trophic Levels
 7. Closing
 8. Exit Slip
 9. Homework time (if time is left)
-

Beef

Grass → Cow → humans

Food Chains: Pathways for Matter and Energy

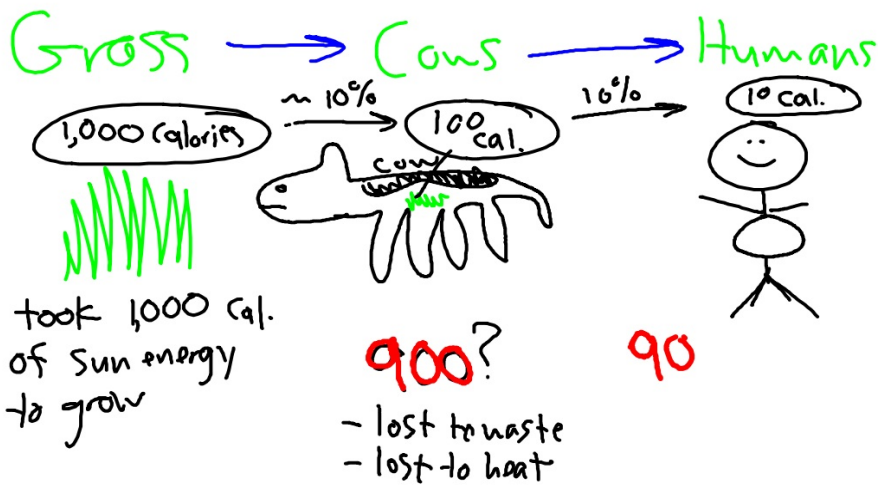
- **Food Chain:** (a simple model used to show how matter and energy move through an ecosystem)

Mosquito → Fish → Human

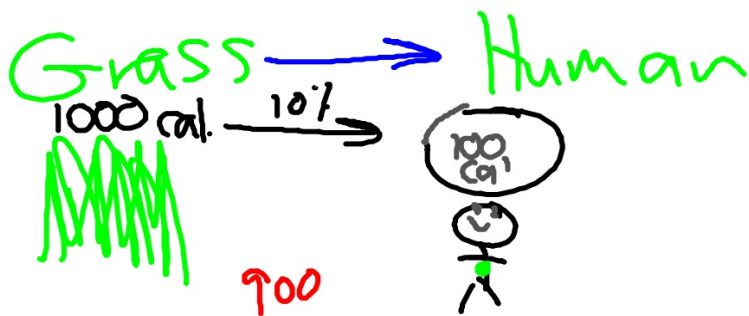
Show us the direction of energy flow

- they show simple relationships between organisms
- usually 3-4 organisms long

Energy is lost at each link



Total Calories lost = 990



Total calories lost = 900

it takes 10 pounds
of corn to grow 1
pound of meat

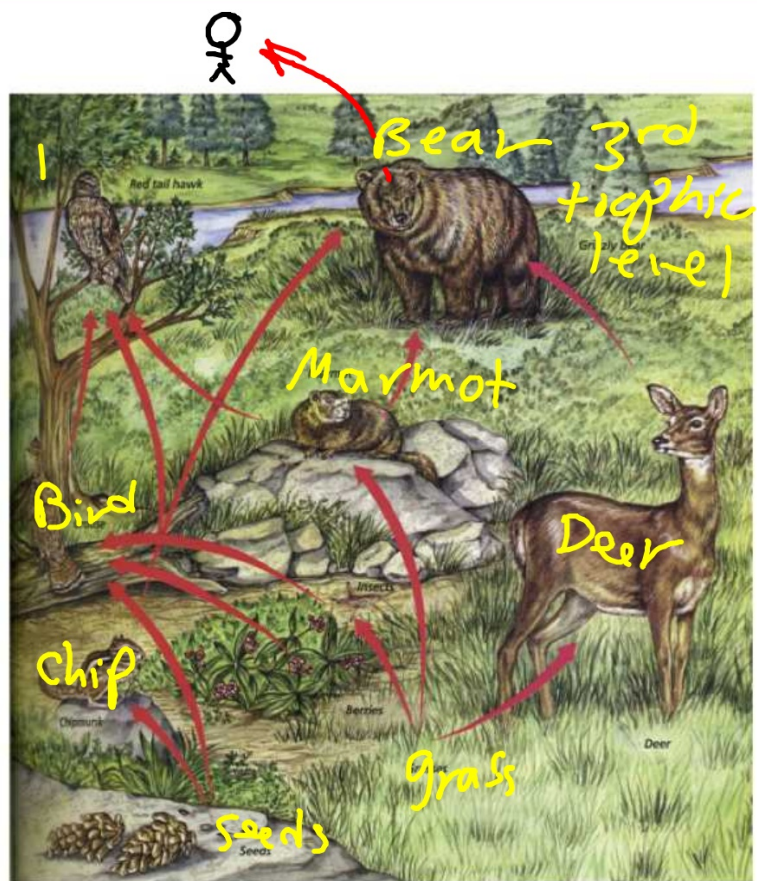
Food Chains: Pathways for Matter and Energy

Mosquito → Fish → Human

-Energy is lost at each link

Food Webs

- **Food Web:** (a model that represents all the possible feeding relationships at each trophic level)
 - More realistic than a food chain because most organisms depend on many source of food
- **Trophic Level:** (a feeding step in a food chain)



Think/Turn/Talk What are the Red Tail Hawks sources of food?

3 Types of Ecological Pyramids

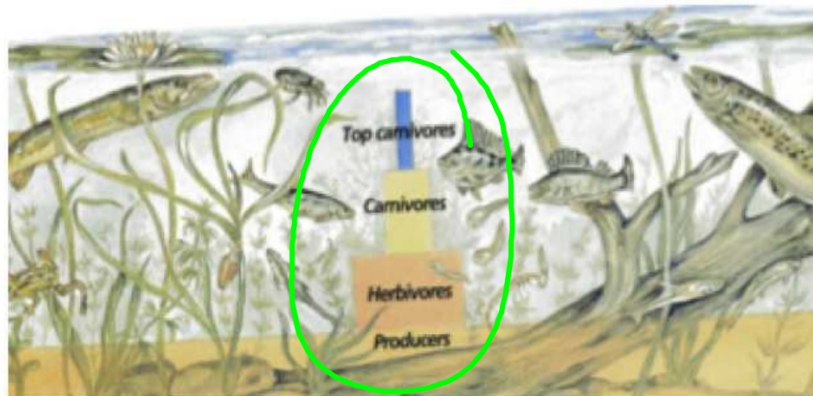
- EP show relationships between trophic levels

1. Energy Pyramid

- **Energy Pyramid:** (shows the amount of energy available within a trophic level)

Think/Turn/Talk

At which trophic level is there the most energy available? The least?



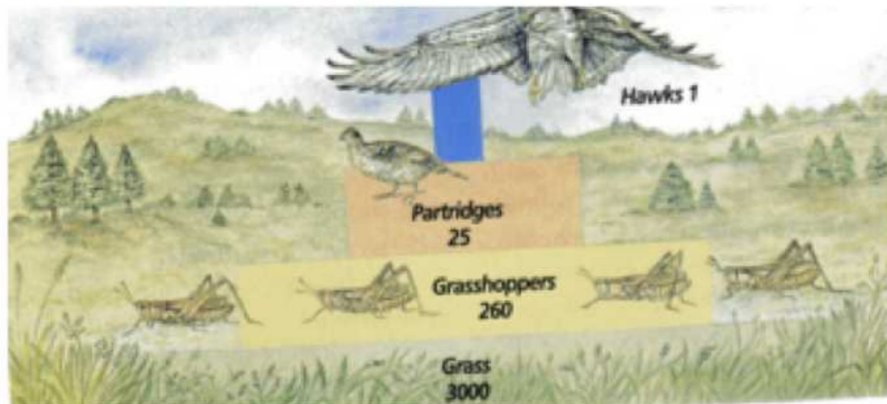
3 Types of Ecological Pyramids

2. Numbers Pyramid

- **Numbers Pyramid**: (shows population size within the trophic levels)

Think/Turn/Talk

Why are there so few hawks and so many grasshoppers?



3 Types of Ecological Pyramids

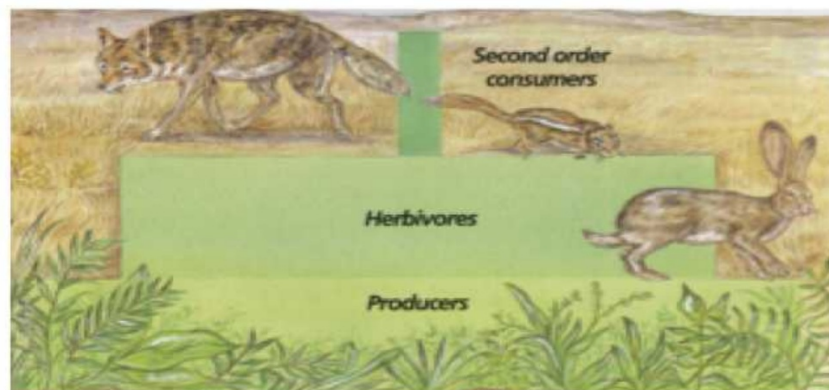
Biomass: (the total weight of organisms in a given area)

3. Biomass Pyramid

- **Biomass Pyramid**: (shows the weight of biomass at each trophic level)

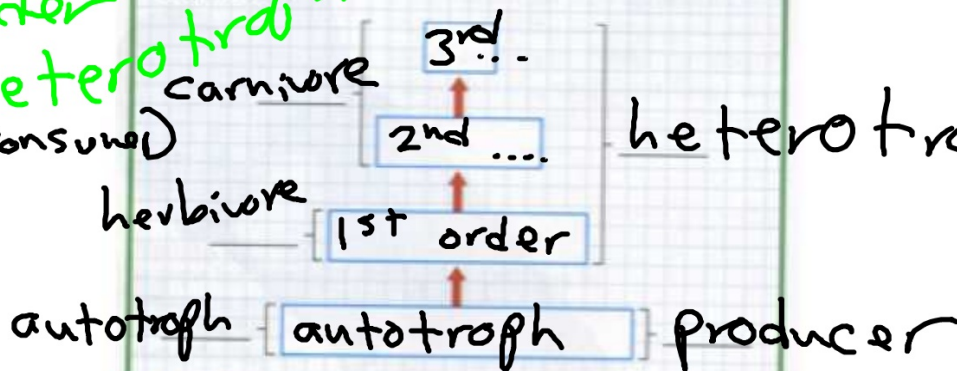
Think/Turn/Talk

Which type of hetero



Problem Solving Lab 2-2 Applying Concepts

How can you organize trophic level information?
Diagrams or charts may help to summarize information or concepts in a more logical and simpler manner. This is the case with information that shows relationships among trophic levels.



Analysis

Copy the diagram above. It will show, when completed correctly, the various relationships in a food chain.

Thinking Critically

- ✓ Each box represents a trophic level. Write the name for each trophic level in the proper box. Use these choices: 1st order heterotroph, autotroph, 3rd order heterotroph, 2nd order heterotroph.
- Each bracket identifies one or more traits of the trophic levels. Use the following labels to identify them in their proper order: herbivore, autotroph, carnivore, heterotroph, producer.
- What is being represented by the small arrows connecting trophic levels?

herbivore
~~auto.~~
carnivore
hetero.
~~producer~~

