

# Jan 11 , 2012

cont notes on Energy Transfer in Ecosystems  
Understanding Concept Questions/Worksheet

## Warm-Up:

Killer bees, or Africanized bees, are aggressive insects that have been known to chase a person or an animal up to a quarter of a mile. It takes a European bee roughly \_\_\_\_\_ seconds to sting; a killer bee can manage the task in about three seconds.

30 Seconds



## Energy Movement Cont...

- The farther you travel up the food chain/web the less energy is available.
- In every ecosystem, there is less energy available to secondary consumers than there is to primary consumers.
- 90% of energy is lost at each level.

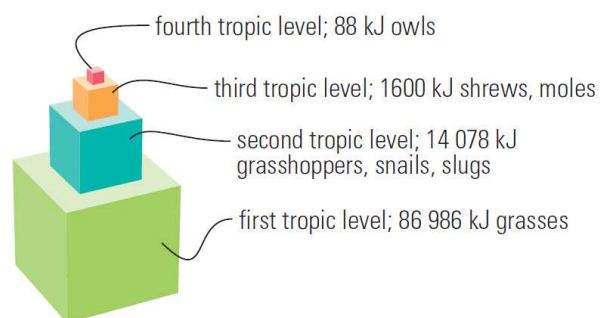
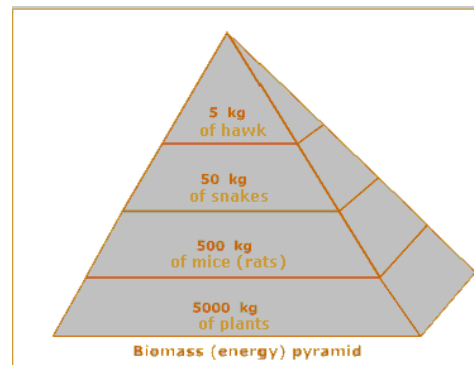
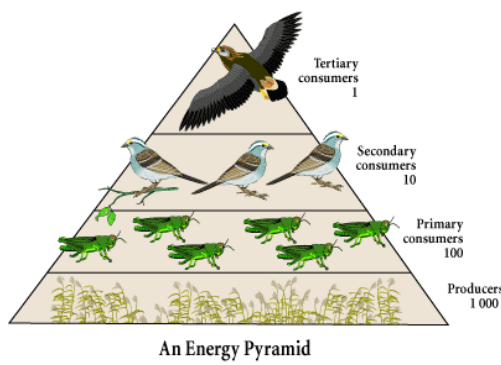


Each time an organism is added to food chain/web there is energy being transferred between the organisms. This energy transfer follows the law of thermodynamics.

**1st law of thermodynamics-** Although energy can be transformed from one form to another, it cannot be created or destroyed.

**2nd law of thermodynamics-** During any energy transformation, some of the energy is converted into a form, mostly heat, that cannot be used.

**Energy pyramids:** graphs that are used to represent the energy flow in food chains and food webs or populations of organisms in the food chain. Three types: Energy, numbers and biomass.



In your notebook draw the following pyramids from the information below:

### 1) Pyramid of Energy

algae  $4200 \text{ kJ/m}^2$ , zooplankton  $420 \text{ kJ/m}^2$ , cod  $42 \text{ kJ/m}^2$ , seals  $4 \text{ kJ/m}^2$

### 2) Pyramid of Biomass

Grass  $10\,000 \text{ kg}$ ; beetles  $1500 \text{ kg}$ ; praying mantises  $150 \text{ kg}$ ; shrews  $1.5 \text{ kg}$

### 3) Pyramid of Numbers

Grass plants  $150\,000$ ; mice  $2000$ ; snakes  $90$ ; hawks  $3$

pg 34-39 : Complete Understanding Concepts  
# 1-6,10

Complete Handout Ecosystem Relationships

## Attachments

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Uranus student response(4).avi

student response no tilt.avi