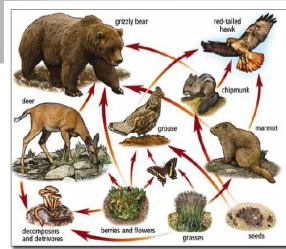


## Chapter 3

### Section 3.2/3.3 Energy Flow in Ecosystems



Biology  
Mrs. Michaelsen

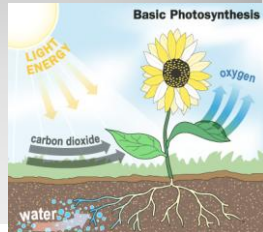
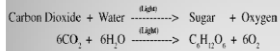
## Primary Producers

- **Autotrophs:** Use solar or chemical energy to produce "food" (inorganic to organic).
- Called **primary producers:** Essential to the flow of energy in an ecosystem.



**\*SUNLIGHT is the main source of energy\***

**Photosynthesis:** uses light energy to make "food."



**Chemosynthesis:** makes food from chemicals (some bacteria synthesize food in this way)

Some bacteria live in deep ocean vents, and make their food from chemicals in those vents



## Consumers

**Heterotrophs:** Animals, fungi, many bacteria must acquire energy from other organisms.

Define from page 71 and write example

Carnivore:

Scavenger:

Decomposer:

Herbivore:

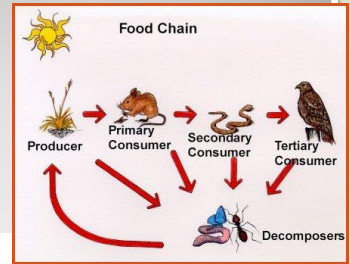
Omnivore:

Detritivore:

## FOOD CHAINS AND FOOD WEBS - illustrate the flow of energy in an ecosystem

\*Note the direction of the arrows, they indicate where the energy is going when one organism consumes another.

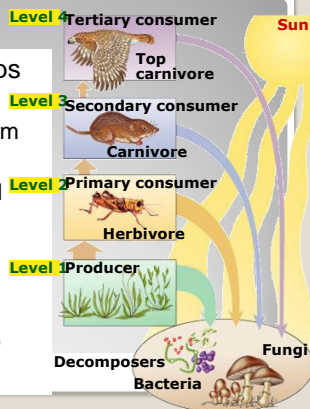
Each step in a chain or web is called a **TROPHIC LEVEL**



## Food chains

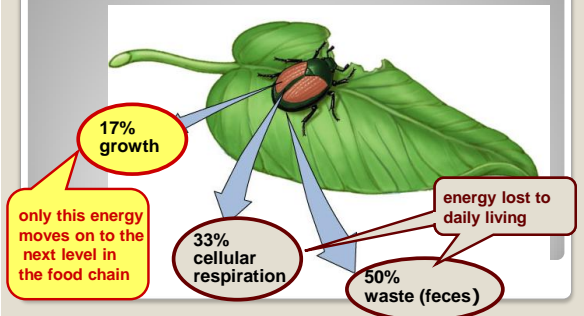
### Feeding relationships

- All food chains start with energy from the sun
- First level of all food chains is plants
- Most food chains usually go up only 4 or 5 levels
- All levels connect to decomposers



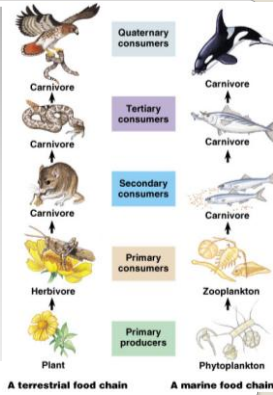
## Loss of energy

- Loss of energy between levels of food chain
- To where is the energy lost? **The cost of living!**



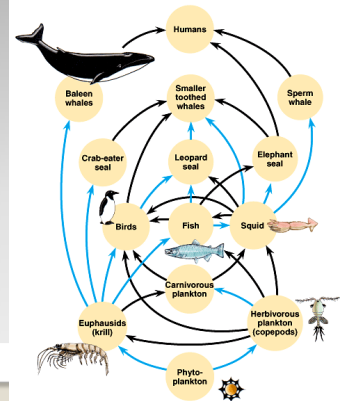
### Feeding levels

- How much energy can you get from food?
  - Only the energy that is stored in the organism
  - 80-90% energy lost from one level to next
  - Food chain can only have 4 or 5 levels



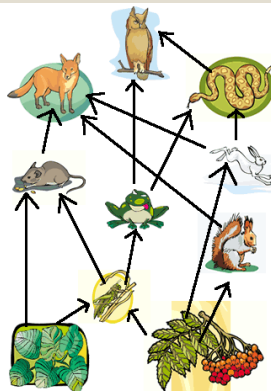
### Food webs

- Food chains are linked together into food webs
- Who eats whom?
  - eating meat?
  - eating plants?
- Many connections throughout ecosystem



### Identify:

- Primary Consumers
- Secondary Consumers
- Tertiary Consumers
- Find the Omnivore.



### Energy flows through...

