

NAME _____ HR _____

Interactions in the Environment Outline

POPULATION

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COMMUNITY

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- The amount of variety in a community is called species _____ or _____.
 - few species = _____
 - many species = _____

PROPERTIES OF A POPULATION

- DENSITY:
- DISTRIBUTION:
- GROWTH RATE:

CARRYING CAPACITY

- The _____ of a _____ that can be supported by an _____.
- The _____ has reached a maximum for the particular _____.
- _____ growth slows and may reach a stage of _____ as the population density comes close to an area's _____.

- _____ means that the size of the population is no longer _____.
- The _____ and _____ rate are about equal.

In food relationships, nutrients (food) are transferred from one organism to another.

Autotrophs

- Can make their own _____ from _____.
- Also called _____.
- Example:

HERBIVORES

- _____ that feed on _____ and _____.
- Examples:

CARNIVORES

- _____ that feed on _____.
- Examples:
- **PREDATORS:**
- **SCAVENGERS:**

OMNIVORES

- _____ that feed on both _____ and _____.
- Example:

DECOMPOSERS

- Feed on _____ and _____ organisms.
- Also called _____.
- Examples:

SYMBIOTIC RELATIONSHIPS

SYMBIOSIS:

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- At least _____ member of the association _____ by the association.

MUTUALISM

- A relationship in which
 - Example: **nitrogen-fixing bacteria** – a type of bacteria that lives in little knobs on the roots of peas and clover plants. These bacteria make important nitrogen compounds that are used by the plant and the plant supplies moisture and organic nutrients to the bacteria.

COMMENSALISM

- Two organisms
 - Example: The remora (little fish) attaches itself to the shark's body with little suction cups. The remora gets scraps of uneaten food from the shark; the shark is not harmed by the relationship.

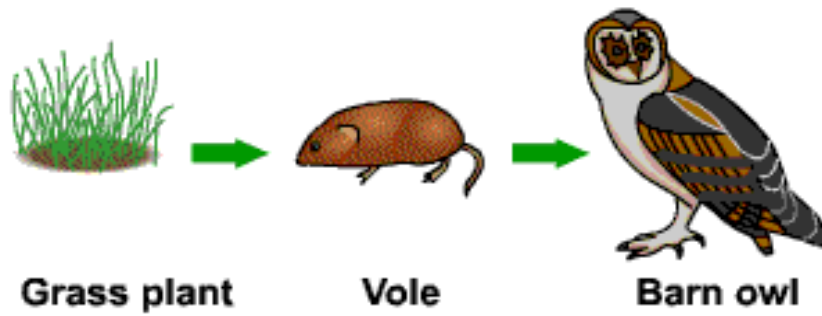
PARASITISM

- - Example: Athlete's foot fungus (parasite) feeds on the host organism (humans). The host is harmed by the relationship and the parasite benefits.

COMPETITION

- Competition occurs when there is a _____ among _____ living in the same _____ (_____) for the same _____.
- Some of these _____ are _____, _____, _____, _____, and _____.
- When two _____ compete intensely for the same _____, one _____ usually _____.
- _____ may result in the _____ of one _____ in the _____.
- _____ species tend to _____ their use of common _____.

FOOD CHAINS



Trophic Levels

- **Producer** –

- **Primary Consumer** –

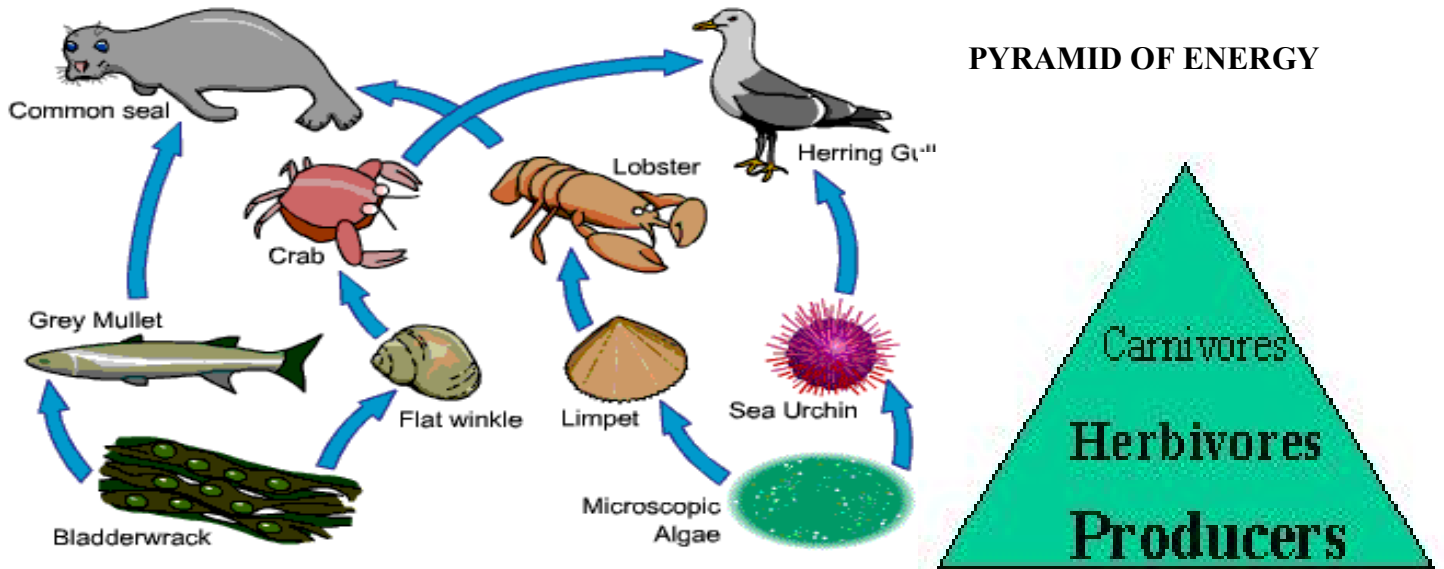
- **Secondary Consumers** –
- **Higher-Level Consumers** –

- **Decomposers** –

FOOD WEBS

- In a natural _____, there are many interconnecting _____.
- Most _____ eat more than _____ type of food.
- Most _____ are _____ (eaten) by more than one _____ of organism.

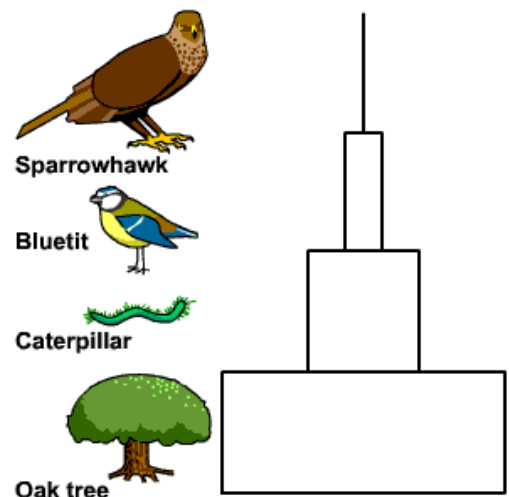
- The _____ of _____ and _____ is much more complicated than a simple _____.



- At each step on the food web, _____ is transferred to the next _____ level.
- Energy is “_____” at each food _____, because much of the food energy taken in by a consumer is used in the process of _____.
- Less _____ is available to the _____ levels on the food chain.

PYRAMID OF BIOMASS

- The amount of _____ in an _____ is its _____.
- This _____ shows that the total _____ an _____ can support decreases at each higher feeding level.
- This is because there is _____ available at each _____.



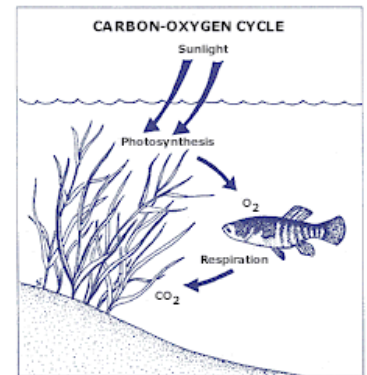
- The _____ amount of _____ is found at the _____ level, and _____ with each _____ feeding level.

MATERIAL CYCLES

- In a self-supporting ecosystem, _____ must be _____ between the _____ and _____ environment so they can be _____.
- There are three major material cycles.

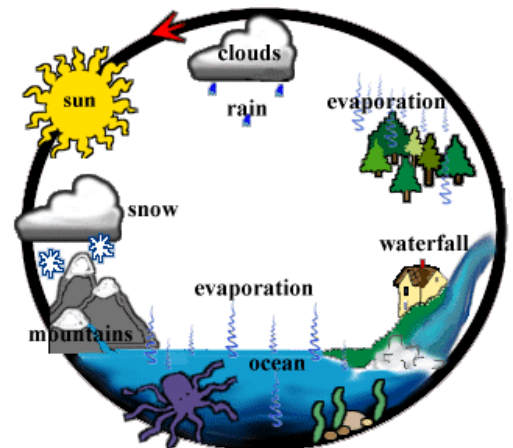
- The **Carbon-Oxygen Cycle**

- o Involves the process of _____ and _____.
- o _____ is released as a byproduct of _____.
- o _____ is released as a byproduct of _____.



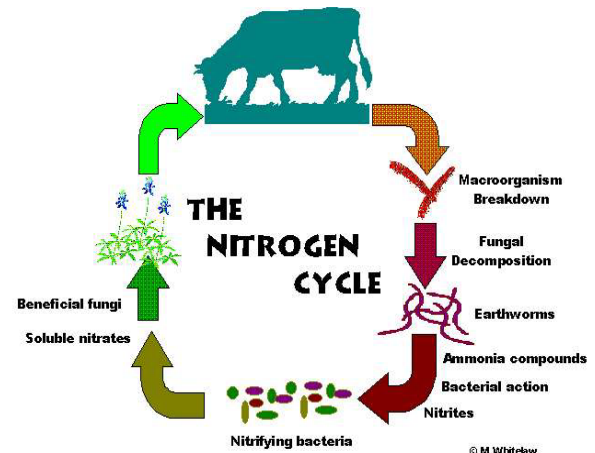
- The **Water Cycle**

- During _____, water is changed into _____ and during _____ water vapor is changed back into water.



- The **Nitrogen Cycle**

- Nitrogenous wastes and the _____ of _____ organisms are converted by _____ and _____ into _____ compounds that can be used by _____ (_____).



ECOLOGICAL SUCCESSION

- The gradual _____ of one _____ by another.
- Ecological _____ eventually leads to the formation of a _____.
- Each _____ slowly changes the _____.
The changed environment often is more suitable for new types of organisms and less suitable for the existing organisms.
- Ecological _____ occurs in step _____.
- A _____ community is called a _____.

Primary Succession

- Occurs in an area that has _____.
- Must begin with the _____.
 - Example: a bare rock, rocky cliffs, sand dunes, newly formed volcanic island, newly exposed land areas.

Secondary Succession

- Occurs in an area where an
 - Example: Forest Fire, Tornado, Hurricane

First Stage

- Can begin with _____.
- _____ are usually one of the first organisms to appear because they can live on _____.
- The first organisms are called _____.
- _____ are able to survive in _____ conditions with _____ nutrients.

Second Stage

Fourth Stage

Third Stage

Fifth Stage

CLIMAX COMMUNITIES

- If environmental _____ in an ecosystem remain _____ over long periods of time, the same _____ of plants and animals that make up that _____ continue to live and _____ together.
- These _____ plant and animal _____ make up a _____ or _____ community.
- There is a _____ within the _____ and the _____.
- A _____ remains until a drastic environmental _____ occurs.
 - Storm, Forest Fire, Flood, Volcanic Eruption
- The _____ of climax community is determined by the _____ factors of the area.

ECOSYSTEM STABILITY

- Under _____ environmental conditions, the _____ of organisms in naturally occurring populations remains _____ (_____), with only _____ periodic _____.
- A _____ ecosystem will be able to _____ invasion by potential _____.
- A _____ ecosystem will be able to resist change in the face of _____.
- A more _____ ecosystem will be more _____.