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Changing your Tomorrow

OUR ENVIRONMENT

SUBJECT:BIOLOGY

CHAPTER NUMBER 15

CHAPTER NAME : OUR ENVIRONMENT

PERIOD-2

Testing previous knowledge –

1. Give two examples of Artificial ecosystems.
2. Which is the ultimate source of the energy for an ecosystem?

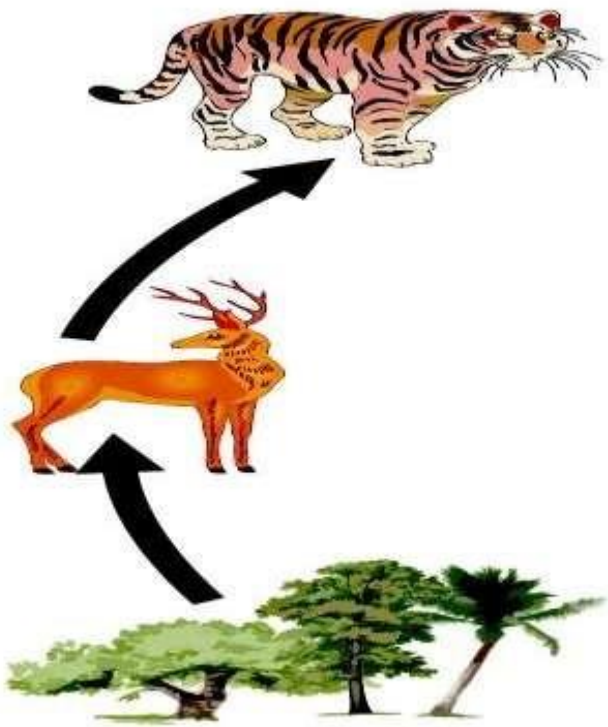
Do we have to clean ponds or lakes in the same manner of aquarium? Why or why not?

Food chain

“A food chain in an ecosystem is a series of organisms in which each organism feeds on the one below it in the series.”

Some common food chains are mentioned below:

- Plants → Deer → Lion
- Plants → Worm→ Bird → Cat
- Plants→ Grasshopper→ Frog→ Snake→ Hawk
- Algae→ Small→ animal → Small fish → Big fish —> Bird



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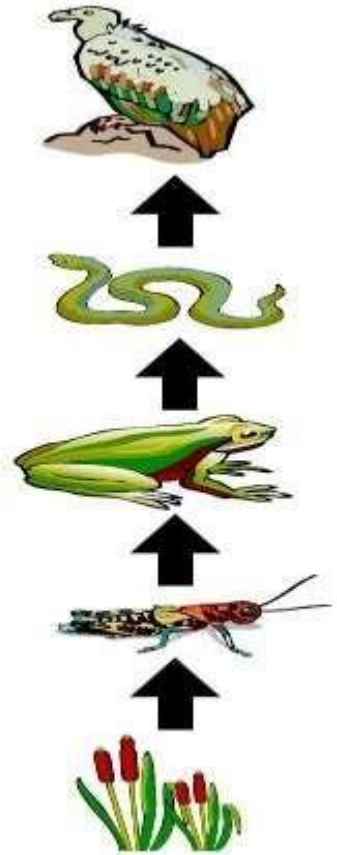

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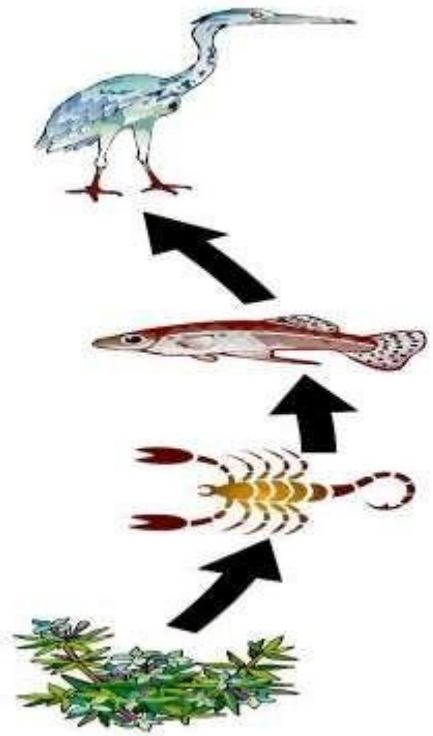

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Food web

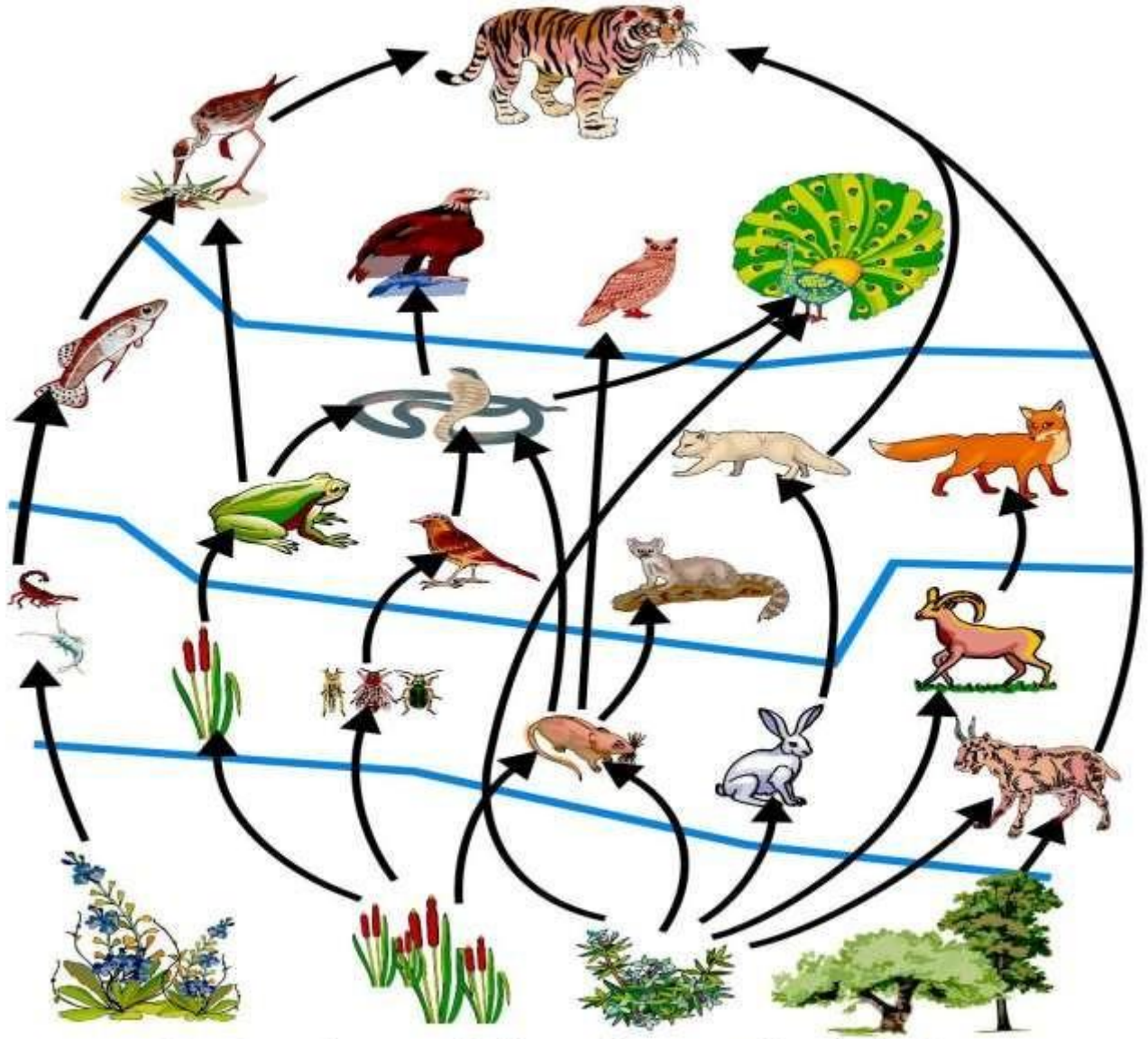
A food web is a graphical depiction of feeding connections among species of an ecological community.

Food web consists of food chains of a particular ecosystem. The food web is a illustration of various methods of feeding that links the ecosystem.

The food web also defines the energy flow through species of a community as a result of their feeding relationships.

All the food chains are interconnected and overlapping within an ecosystem . They also make up a food web. It increases the stability of ecosystem.

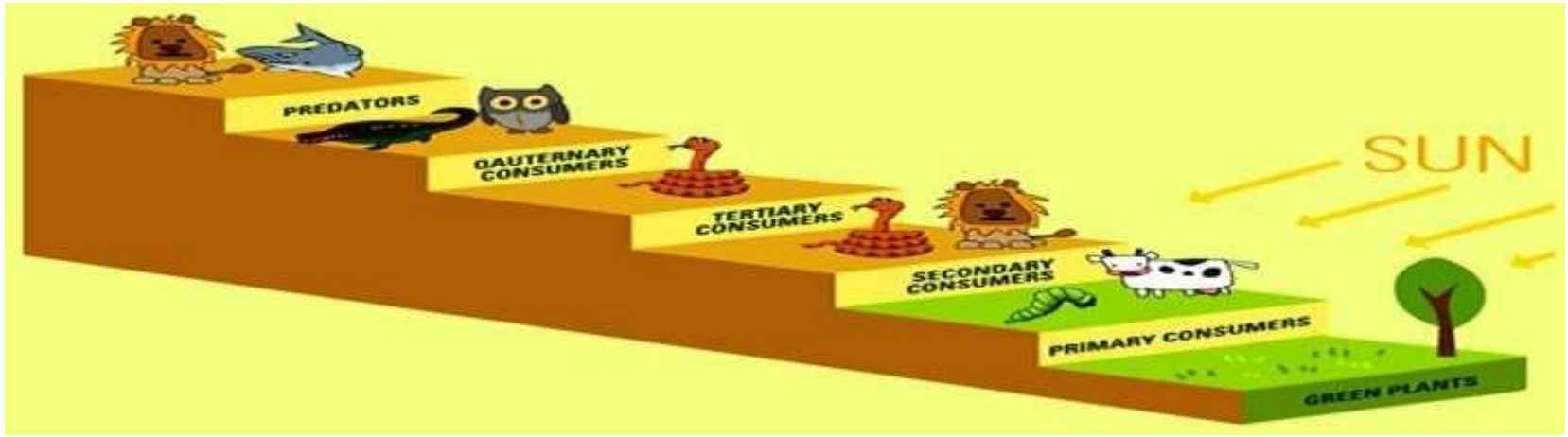
It provides other source of food and allows the endangered species to grow.



Food web, consisting of many food chains

TROPHIC LEVELS OF FOOD CHAINS

The levels of a food chain (food pyramid) is called **Trophic levels**. The trophic level of an organism is the level it holds in a food pyramid.



Each stage of a **food chain** is known as tropic level

Trees	→	Rabbit	→	Snake	→	Hawk
(First trophic level)		(Second trophic level)		(Third trophic level)		(Fourth trophic level)
(Producers)		(I consumers)		(II consumer)		(III consumer)

Energy flow

The transfer of energy in each tropic level in an ecosystem is called energy flow

ENERGY FLOW IS UNIDIRECTIONAL AND REQUIRES CONTINUOUS INPUTS.

- Out of the energy consumed by an organism at a tropic level, 90% is utilized its own need and rest 10% is left for the organism of the next tropic level.
- So, very little energy is left for the organism which is at the tertiary level.

10 percent law

- Let us assume that a green plant makes 100% energy in the form of chemical energy.
- 90% of this energy would be utilized for its own purpose.
- This would leave just 10% energy for the primary consumer
- Now, primary consumer shall also utilize 90% of energy which was consumed by it.
- This would leave just 1% energy for (10% of 10 = 1) the secondary consumer.
- By this logic, the tertiary consumer would get just 0.1% of energy which was originally made by the green plant.
- This is the reason, why there can be just one or two organisms at the top of the food pyramid.

https://www.youtube.com/watch?v=j78g5iRnYBM

HOME ASSIGNMENTS

1. Name the different levels of consumers
2. which two factors decide the formation of a food chain?
3. Why are food chains interconnected and never operate In isolated sequences?
4. How do insecticides enter a food chain.?

THANKING YOU

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