1. TROPHIC PYRAMIDS
2. FLOW OF ENERGY

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- PAPER NAME: Plant Ecology and Taxonomy
- SEM: II
- Class: B.Sc. (Life Science)
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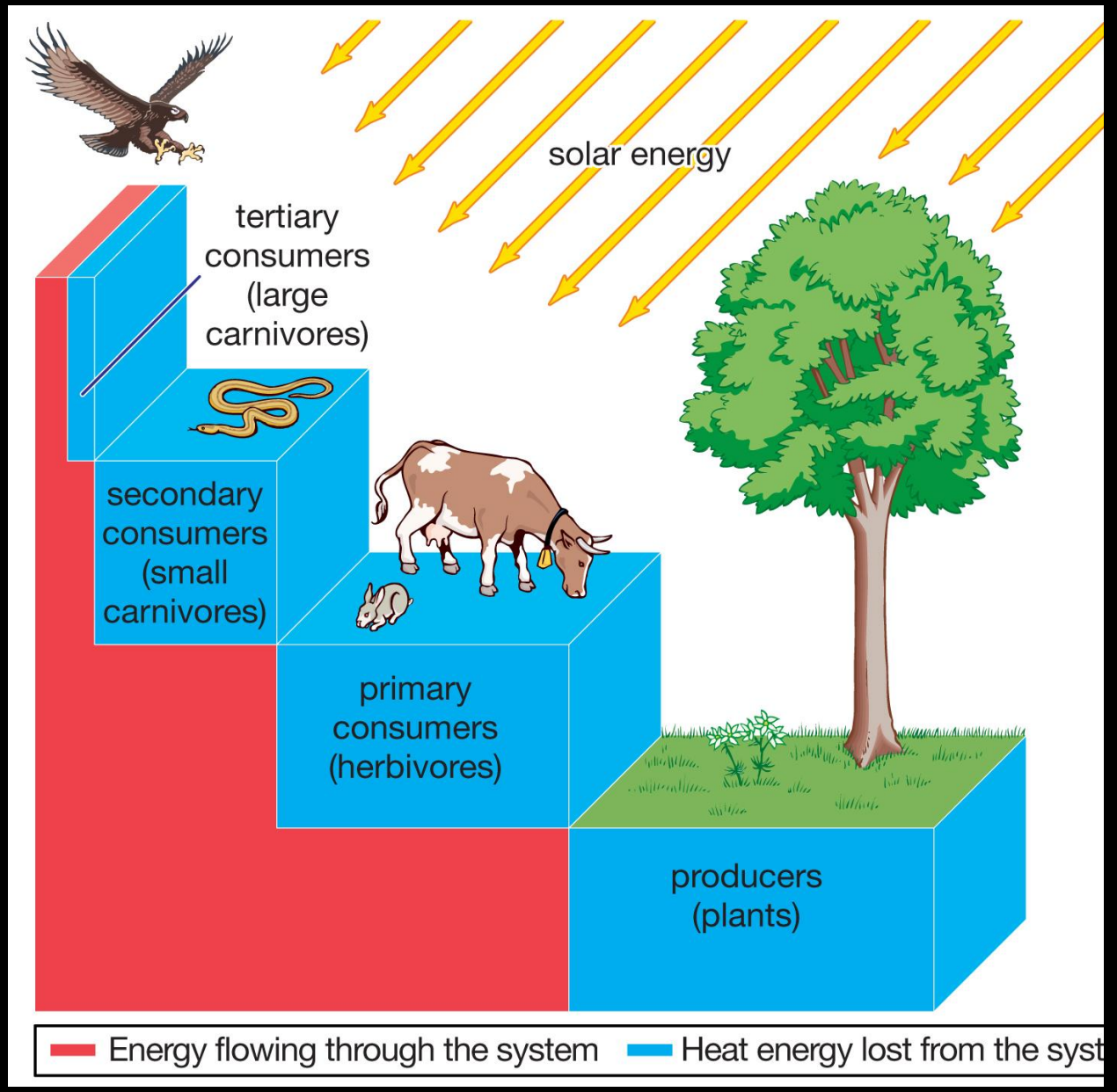
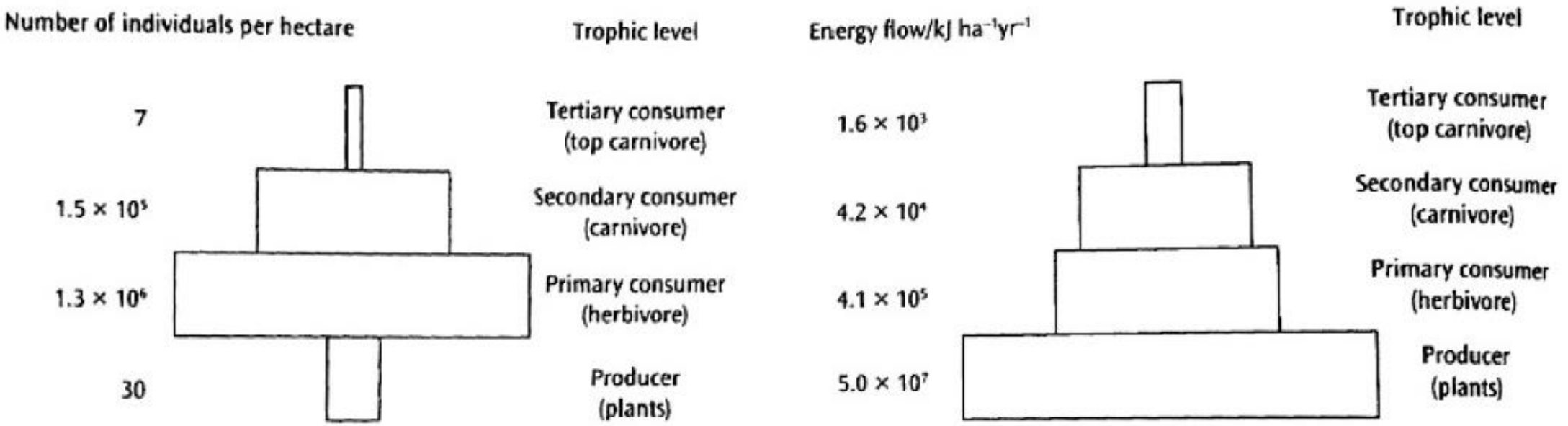




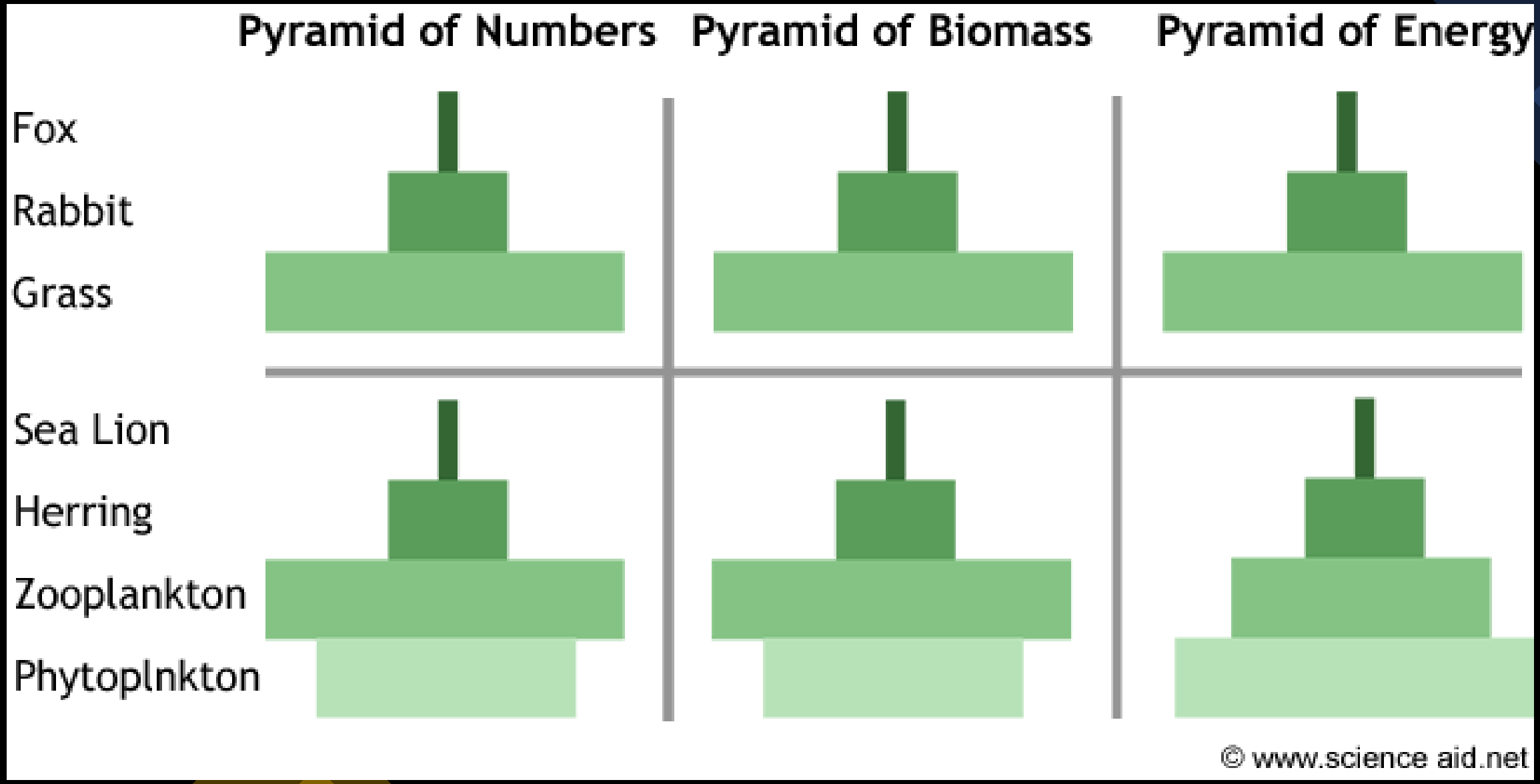
[Source: Chapman, J and Reise M. Ecology: Principles and Application. 1999. Cambridge University Press.]

(a) Explain why the pyramid of numbers in Figure 4(a) has fewer **producers** than consumers. *[1 mark]*

(b) For an ecosystem you have studied, draw a food chain of at least **four** named species. *[1 mark]*

(c) State **one** other type of pyramid used to show trophic levels. *[1 mark]*

(d) Evaluate pyramids of numbers as a method of representing the biotic components of an ecosystem. *[2 marks]*


Pyramid of Numbers
Pyramid of Biomass
Pyramid of Energy
Fox
Rabbit
Grass
Sea Lion
Herring
Zooplankton
Phytoplnkton
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More Review Questions (Not to Be Turned In)

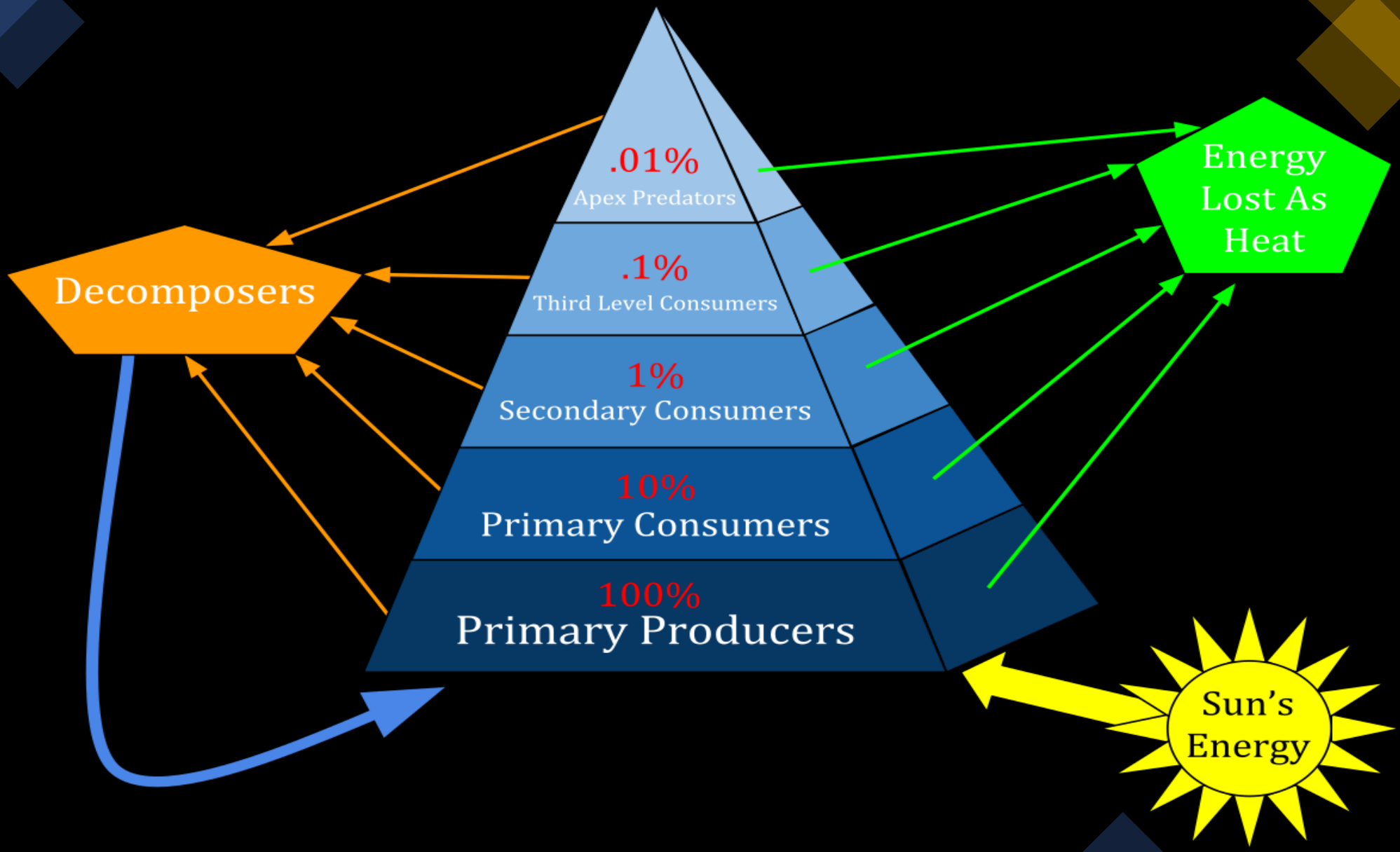
- How is a food web different from a food chain?
- What happens to energy at each link in a food web?
- What type of organism provides the base of a food web?
- What is the difference between a specialist and a generalist?
- What does an energy pyramid show?

Significance of Food Chain

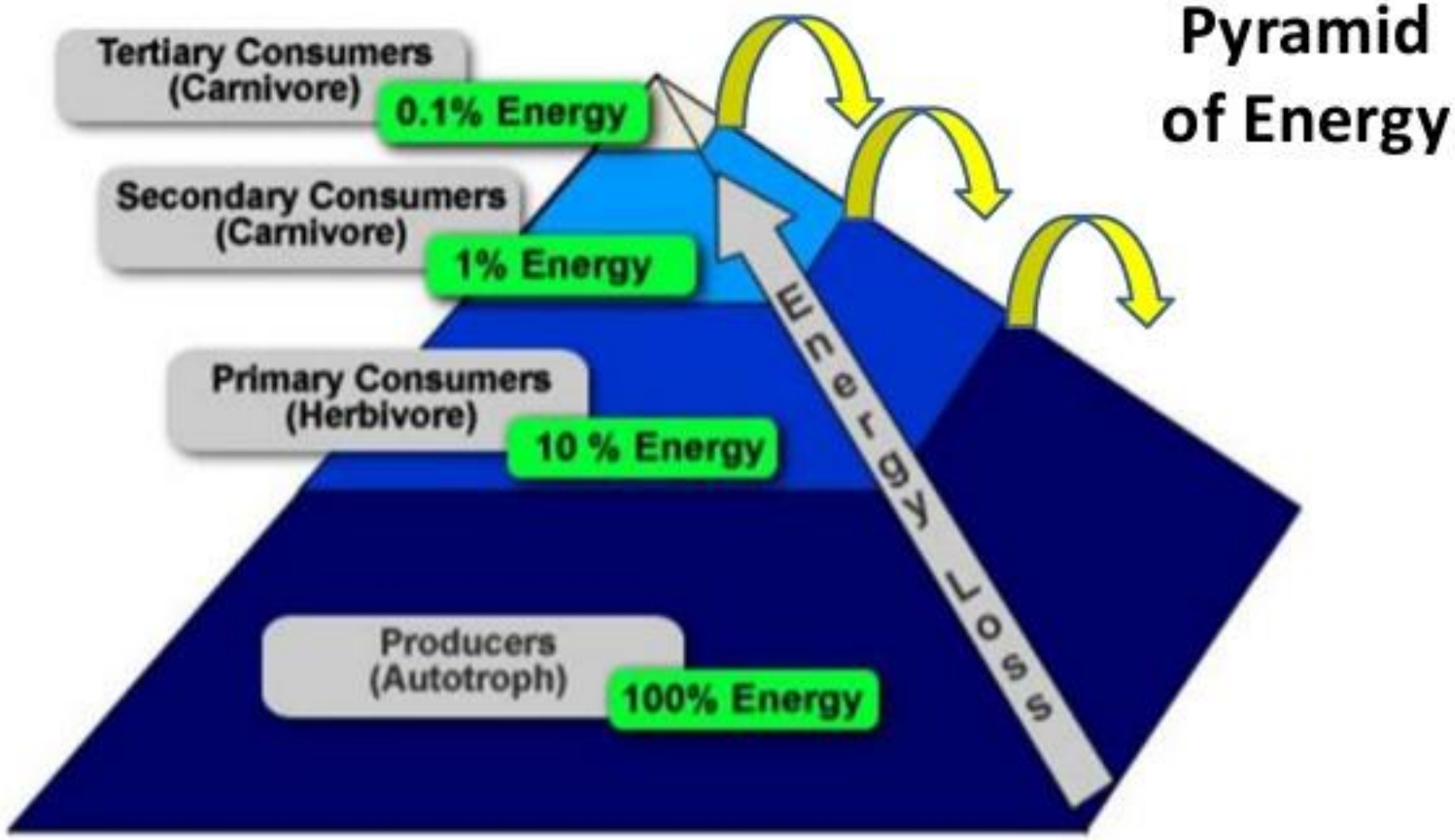
- The knowledge of food chain helps in understanding the feeding relationship as well as the interaction between organism and ecosystem.
- It also help in understanding the mechanism of energy flow and circulation of matter in ecosystem.
- It also helps to understand the movement of toxic substance and the problem associated with biological magnification in the ecosystem.

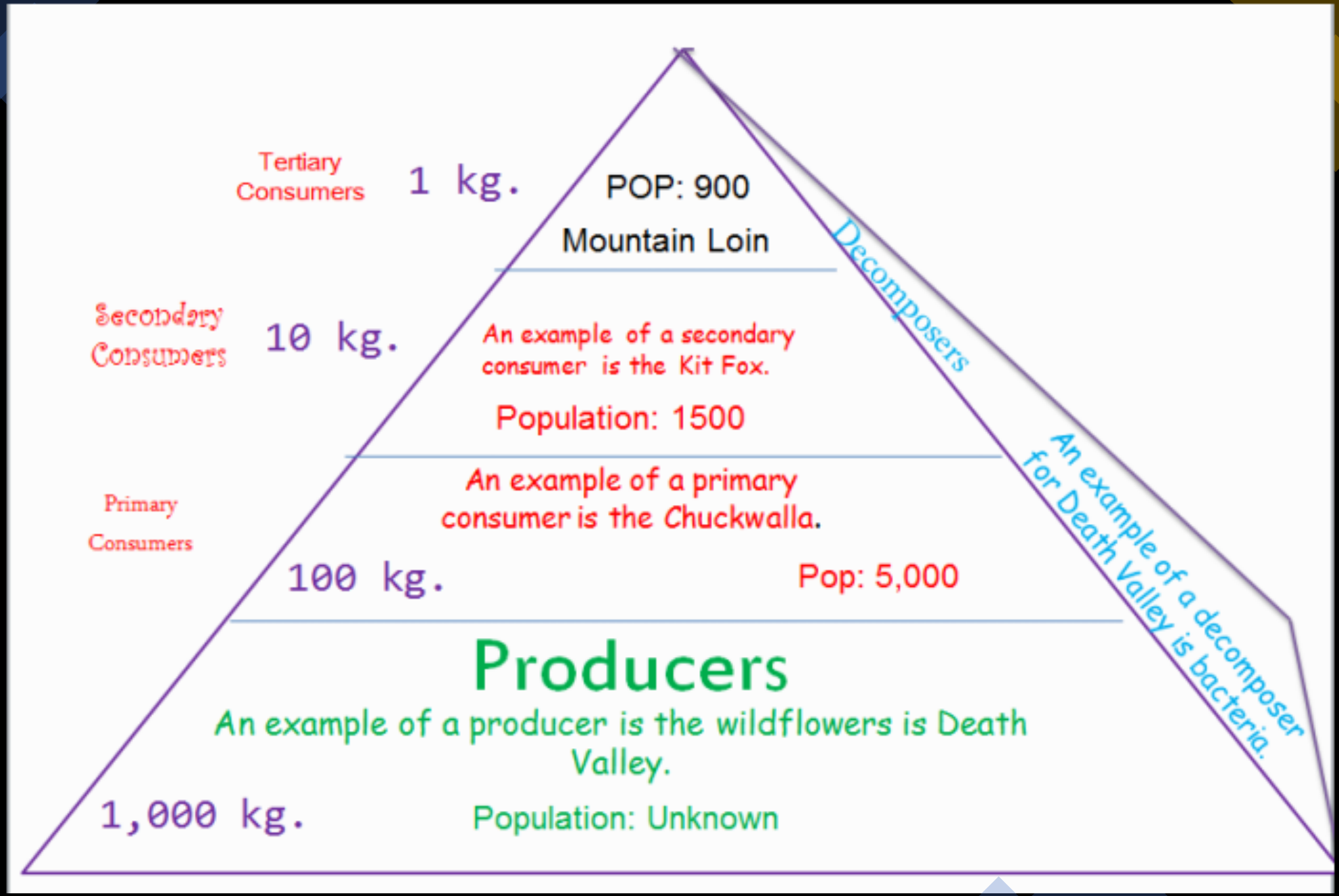
Facts about food chains:

- 10% of the energy value of an organism is transferred to the next level.
- The arrows of both food chains and food webs should point in the direction of the energy flow.


.01%
Apex Predators
.1%
Third Level Consumers
1%
Secondary Consumers
10%
Primary Consumers
100%
Primary Producers
Decomposers
Energy Lost As Heat
Sun's Energy

90% loss in energy at *EACH* trophic level

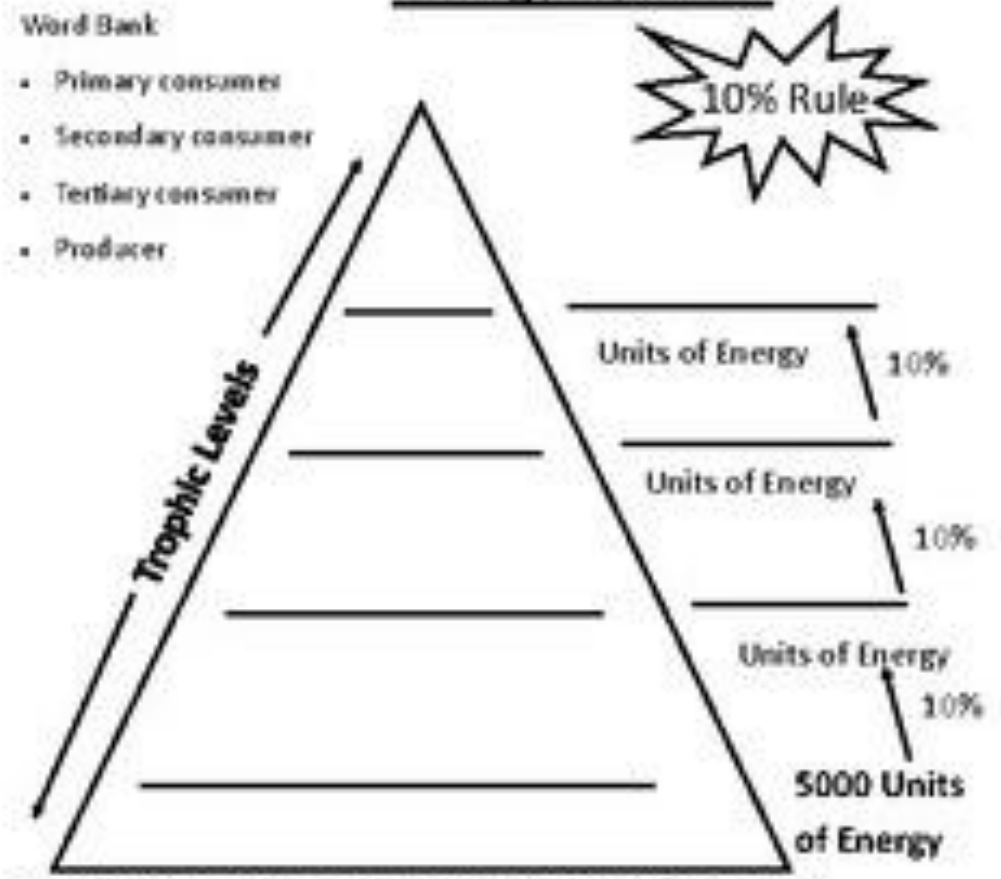



Tertiary Consumers
1 kg.
POP: 900
Mountain Loin
Secondary Consumers
10 kg.
An example of a secondary consumer is the Kit Fox.
Population: 1500
Primary Consumers
An example of a primary consumer is the Chuckwalla.
100 kg.
Pop: 5,000
Producers
An example of a producer is the wildflowers is Death Valley.
1,000 kg.
Population: Unknown
Decomposers
An example of a decomposer for Death Valley is bacteria.

Energy Pyramid

Word Bank

- Primary consumer
- Secondary consumer
- Tertiary consumer
- Producer



Use the Above answers to answer the following:

Which categories are prey:

1.

2.

Which categories are predators:

1.

2.

Significance of Food Web

- Food webs distinguish levels of producers and consumers by identifying and defining the importance of animal relationships and food sources, beginning with primary producers such as plants, insects and herbivores.

- Food webs are important tools in understanding that plants are the foundation of all ecosystems and food chains, sustaining life by providing nourishment and oxygen needed for survival and reproduction.

- The food web provide stability to the ecosystem.

Important facts about Food web

- The base of a food web is occupied mostly by vegetation (producers) and fine organic debris (decomposers).
- Herbivores (primary consumers) and carnivores (secondary consumers) occupy the higher levels.
- Omnivores occupy an intermediate level in the food web.
- Food webs are complicated by the fact that many species feed at various levels.