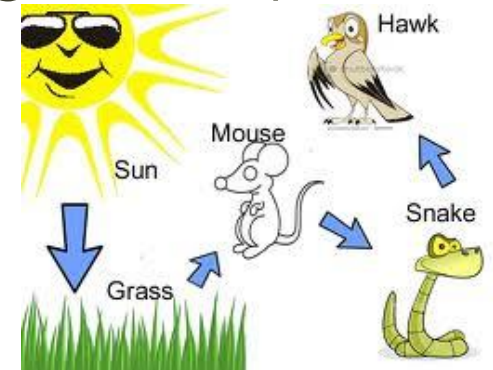




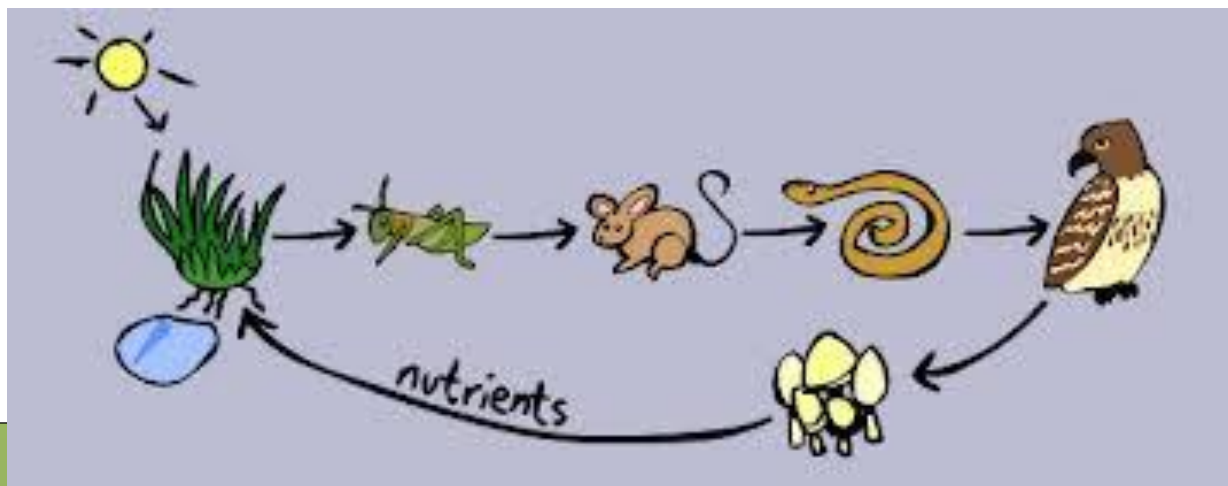
Chapter 4.2:
Food Chains
and Food Webs

Food Chains

- All living things need food. It gives them energy as well as substances they need to build up their body.
- The sun is the starting point of every food chain.
- Plants are found in the beginning of every food chain.



- Plants are found at the beginning of every food chain. They are called producers because they produce food for every other creature.
- Energy is lost as it passes along the food chain. This happens because every organism uses up most of the energy in order to survive and grow.



- Food chains show the feeding relationships between organisms.
- Plants start every food chain by getting carbon dioxide and water and converting them into sugar with the help of the sun.
- Animals then eat the plants and each other so that the energy can be transferred.

Definitions...

- **Herbivores:** animals that feed only on vegetation.

Examples: Sheep, goat, rabbit.

- **Carnivores:** Animals that feed only on flesh.

Examples: Lion, tiger.

- **Omnivores:** animals that feed both on flesh and vegetation.

Example: Humans.

Food Chains Summary

- Food chains show which organisms eat other organisms

Grass → Rabbit → Fox

- The arrows show the transfer of energy from one organism to the next.

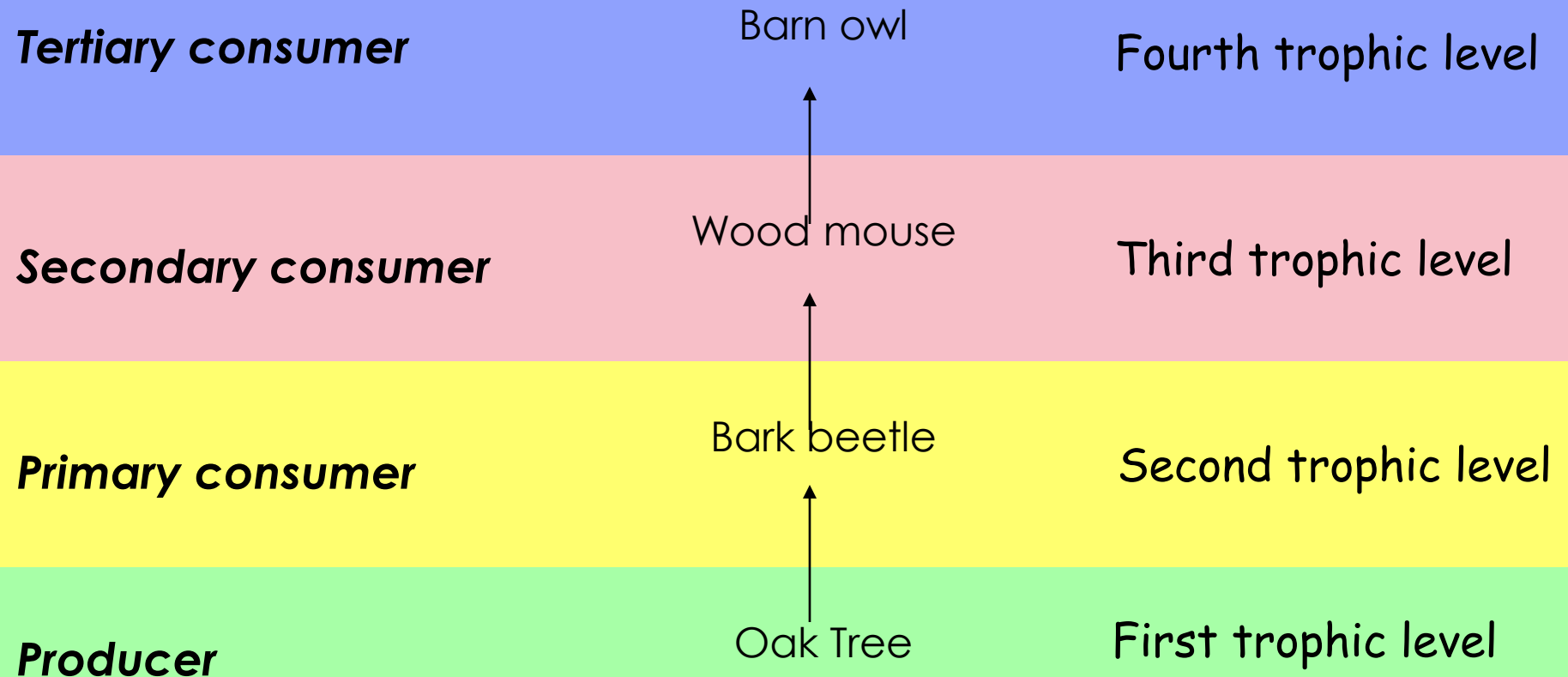
- **Producers** - organisms which can make their own energy from carbon dioxide and water using sunlight for energy (plants)
- **Primary consumer** - organisms which eat producers (herbivores)
- **Secondary consumers** - organisms which eat primary consumers (carnivores)
- **Tertiary consumers** - organisms which eat secondary consumers (carnivores)

- Each level of a food chain is known as a trophic level
- Food chains always start with a producer. Producers are always in the first trophic level.



Food Chains

Each level of a food chain is known as a trophic level

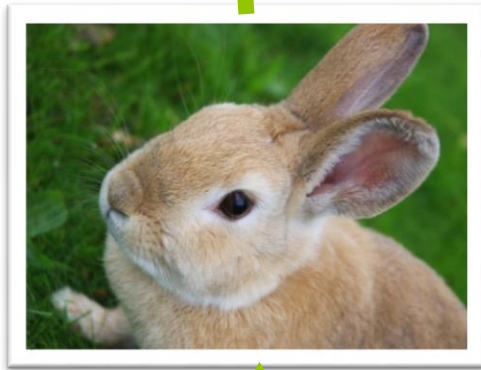


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Food Chains



Secondary
consumer



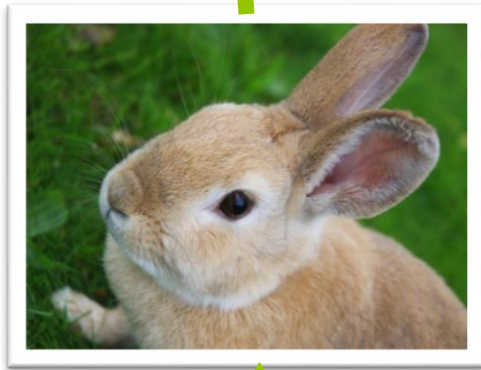
Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Secondary
consumer



Primary
consume
r



Producer



Producer

Primary
consumer

Secondary
consumer

Tertiary
consumer



Producer

Primary
consumer

Secondary
consumer

Tertiary
consumer

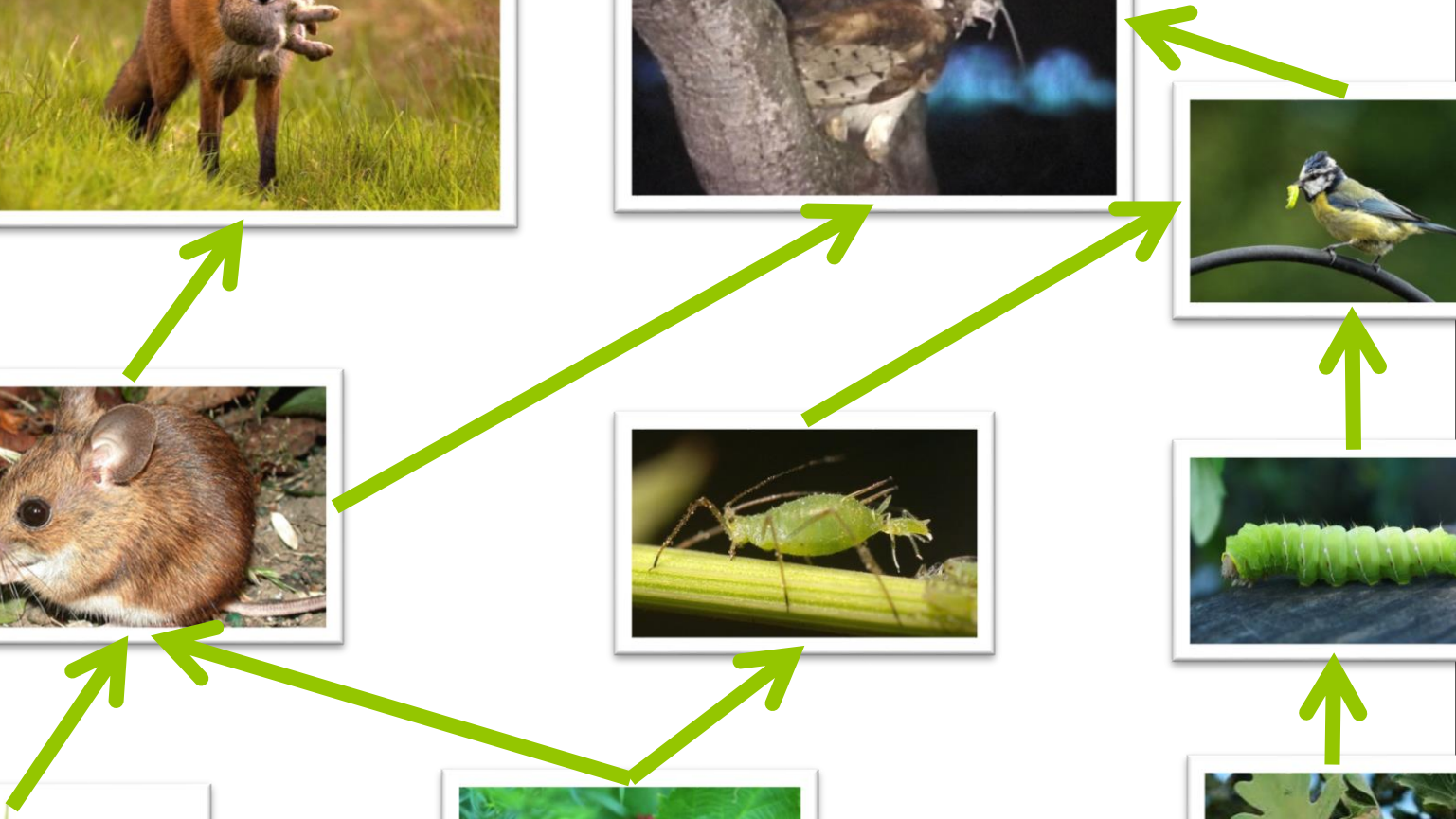
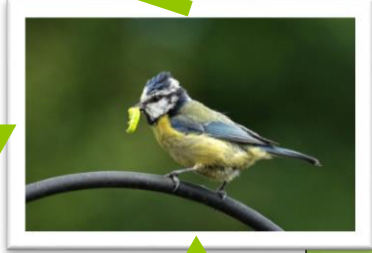
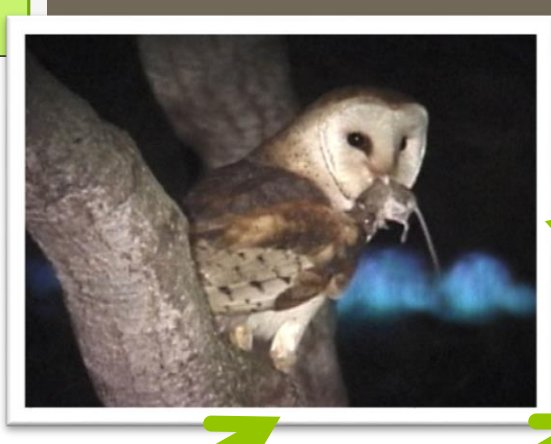
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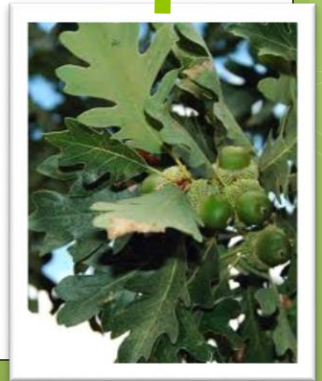
Food Webs

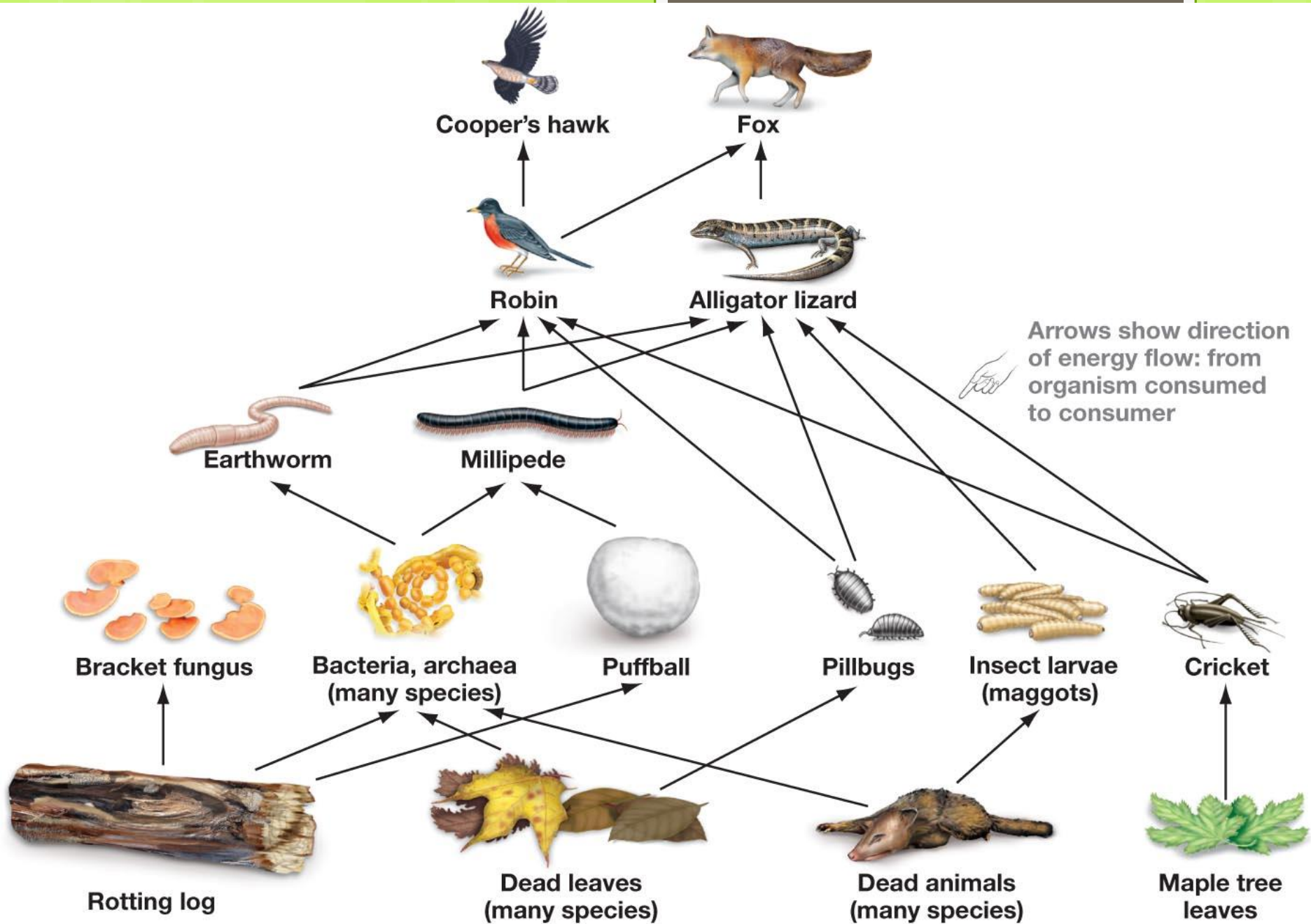
What is the difference between food chains and food webs?

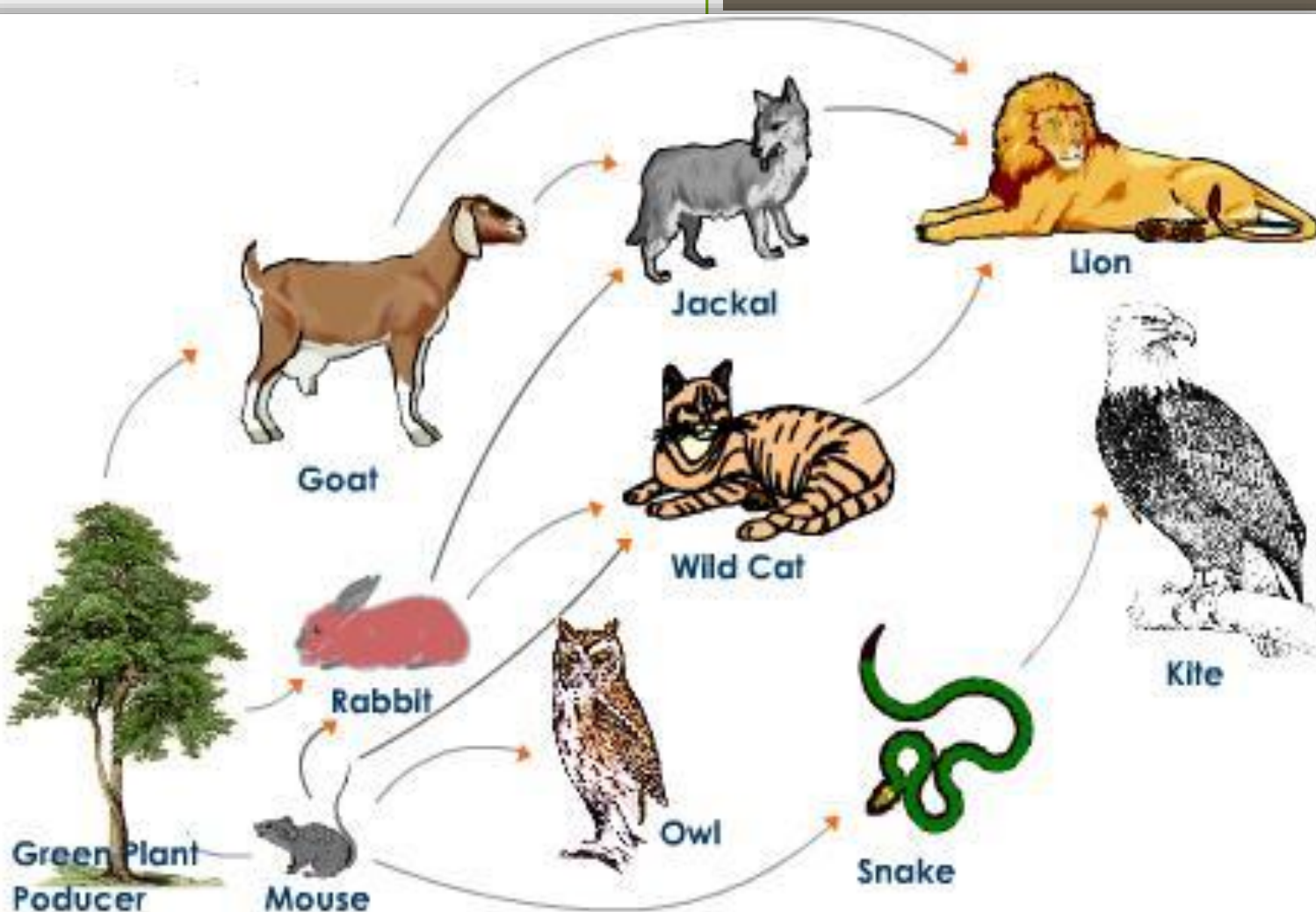
- Food chains are very simple ways of explaining how creatures feed on each other in order to survive.
- In actual life, we can understand that food chains are not very realistic because creatures never feed on just **ONE** other creature.
- Instead they feed on many different creatures feeding on them.

- A snake might feed on a frog, or a rabbit. In turn, the snake might be fed on by an owl and in some cases even by a human.
- At the same time, there are other creatures involved in the same web and all of these affect each other.



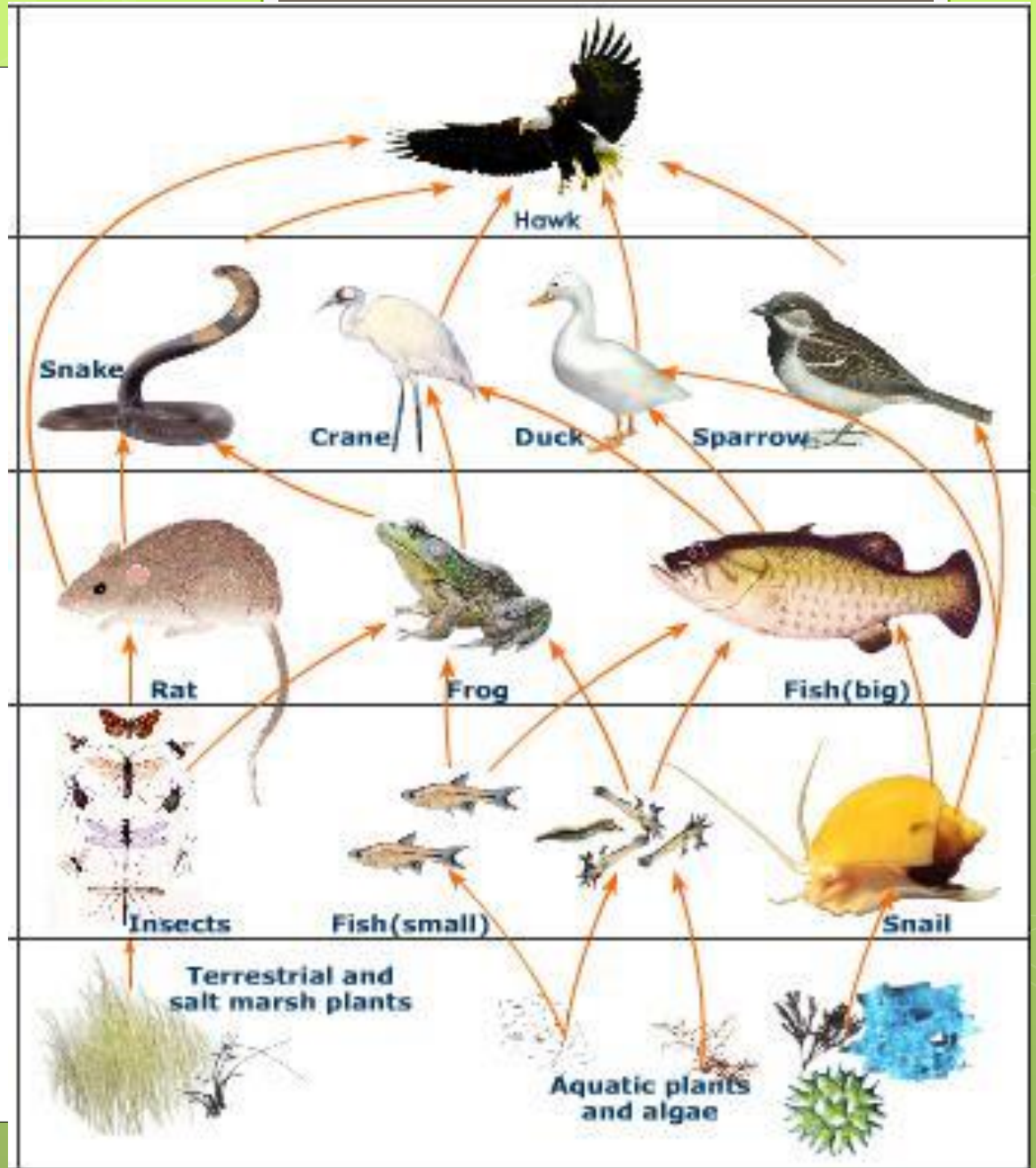




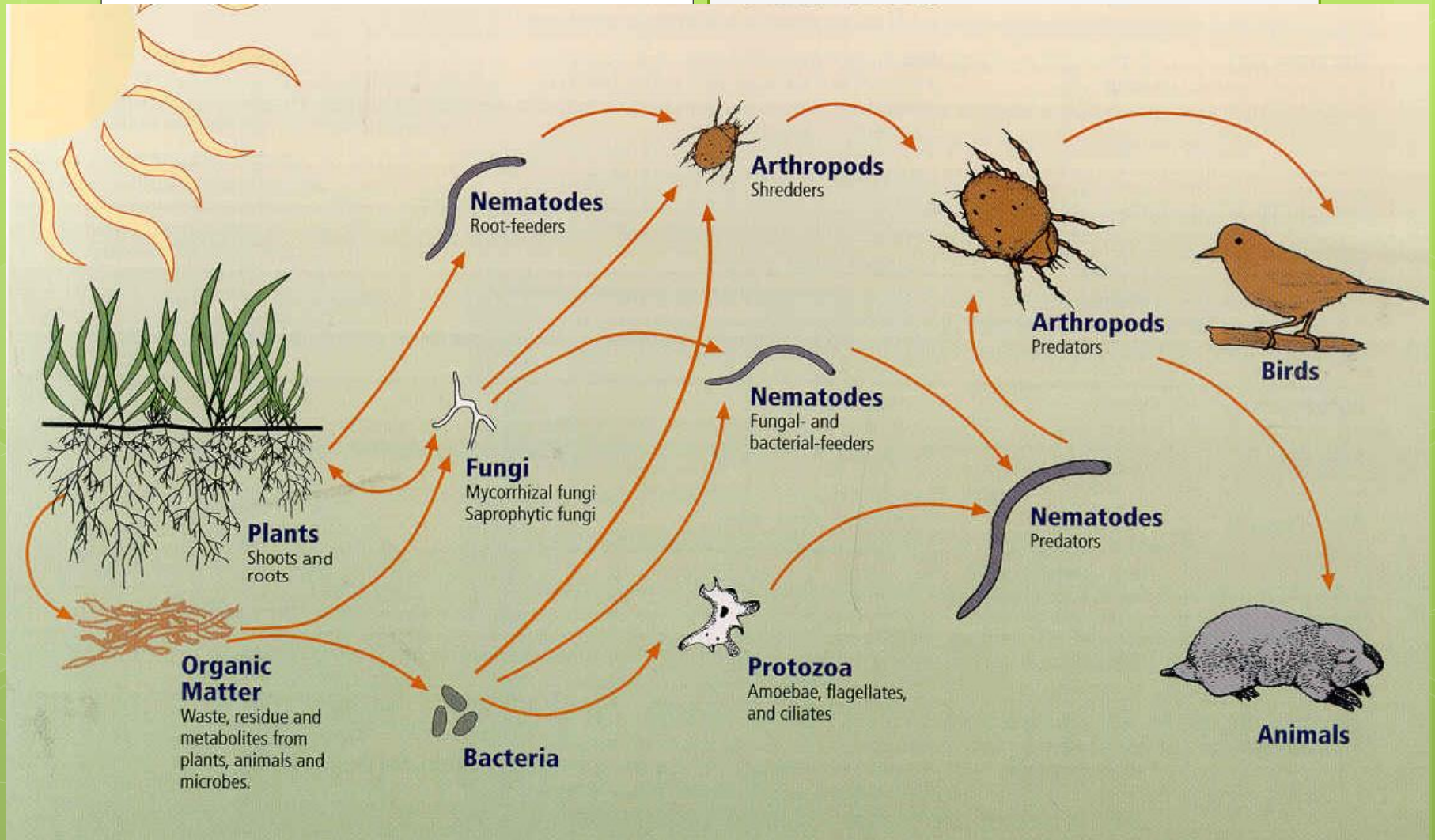


Food Web in a Forest

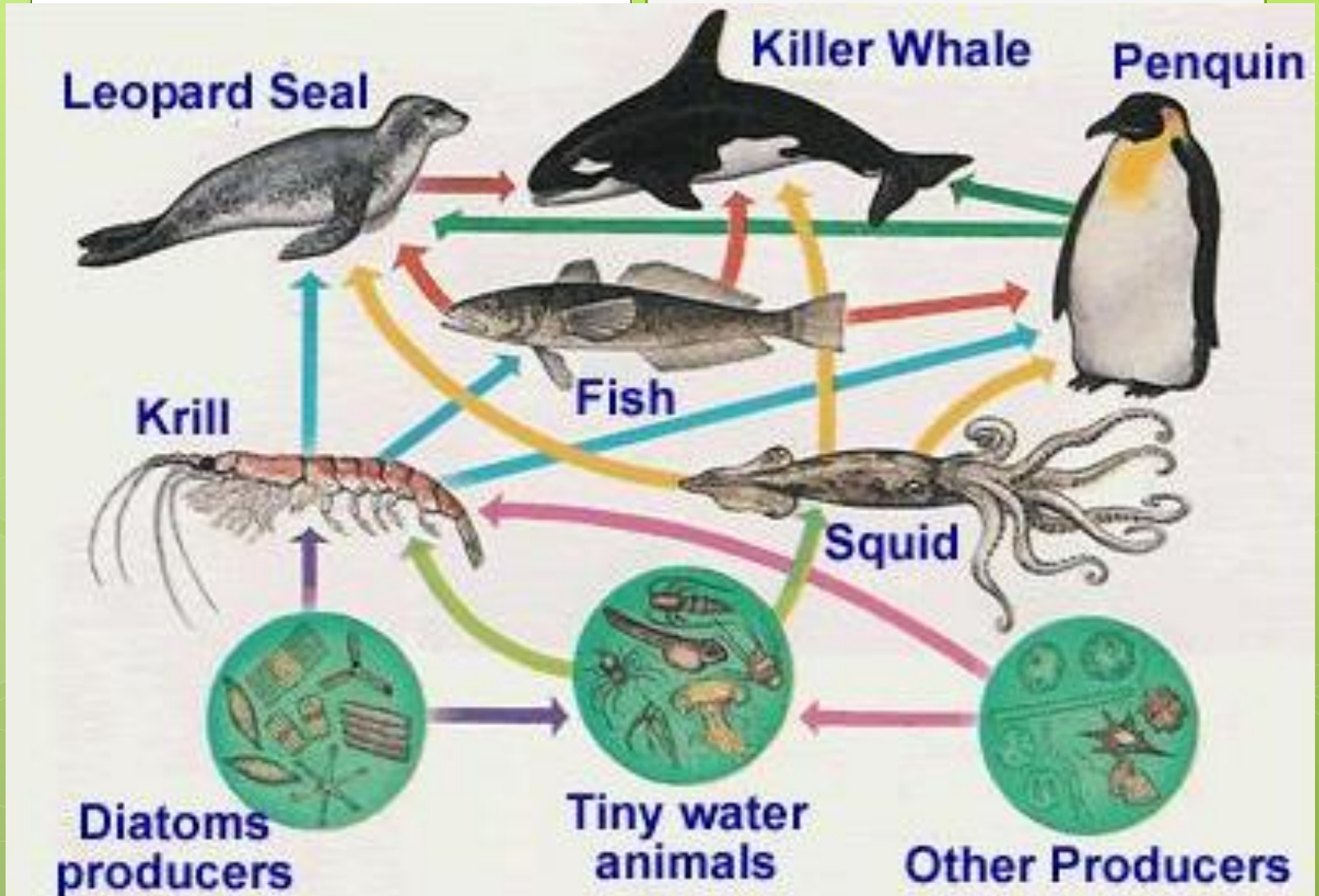
Salt Marsh Food Web



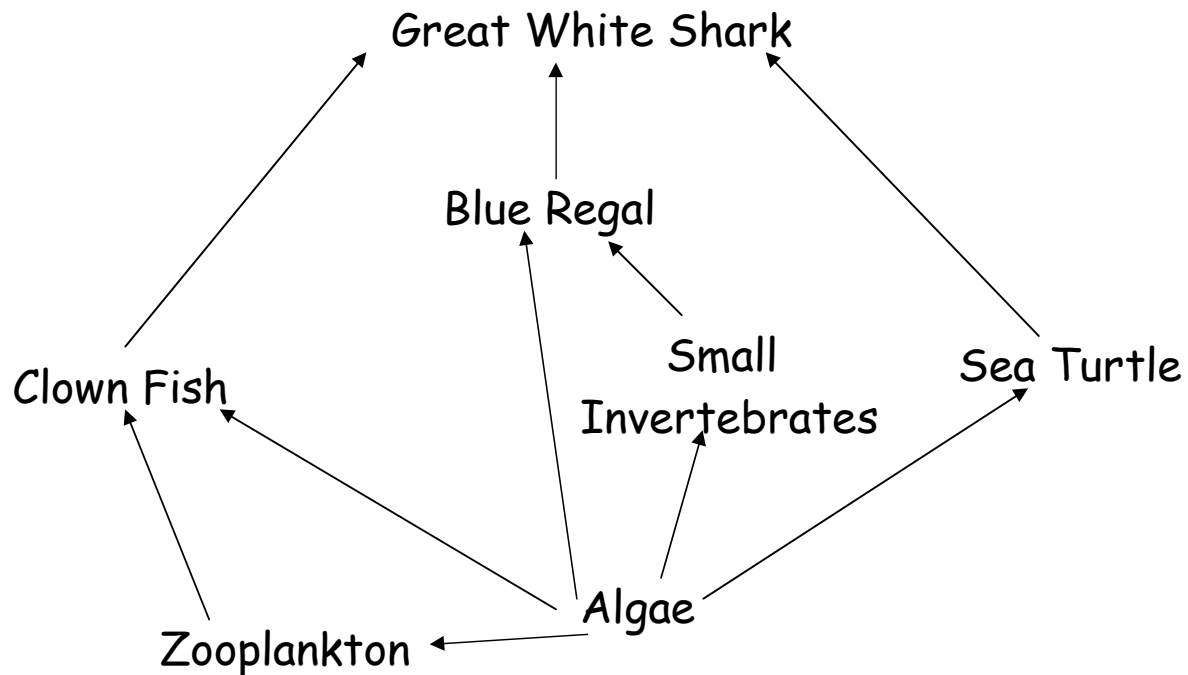
The Soil Food Web



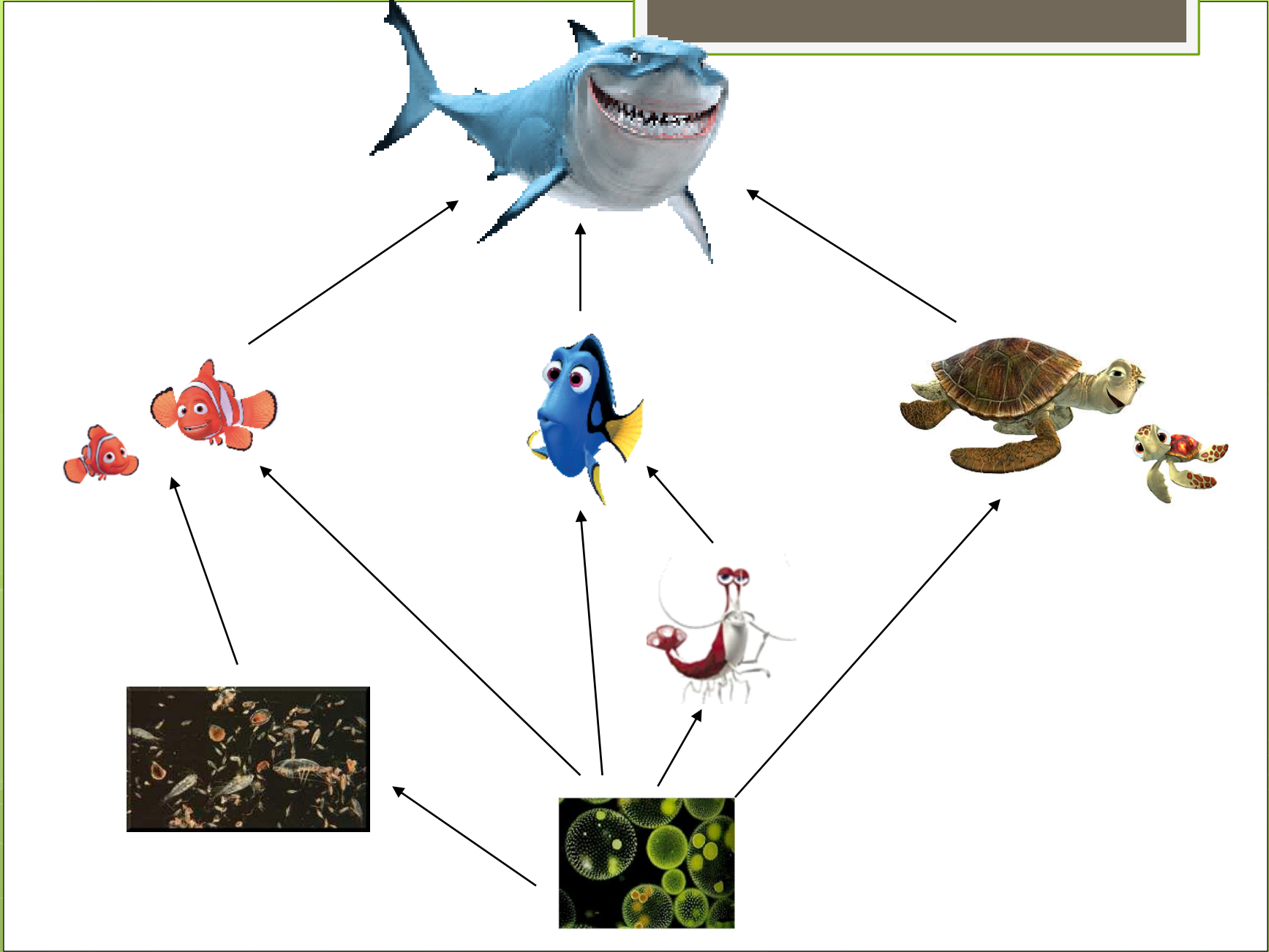
Marine Food web



Food Web

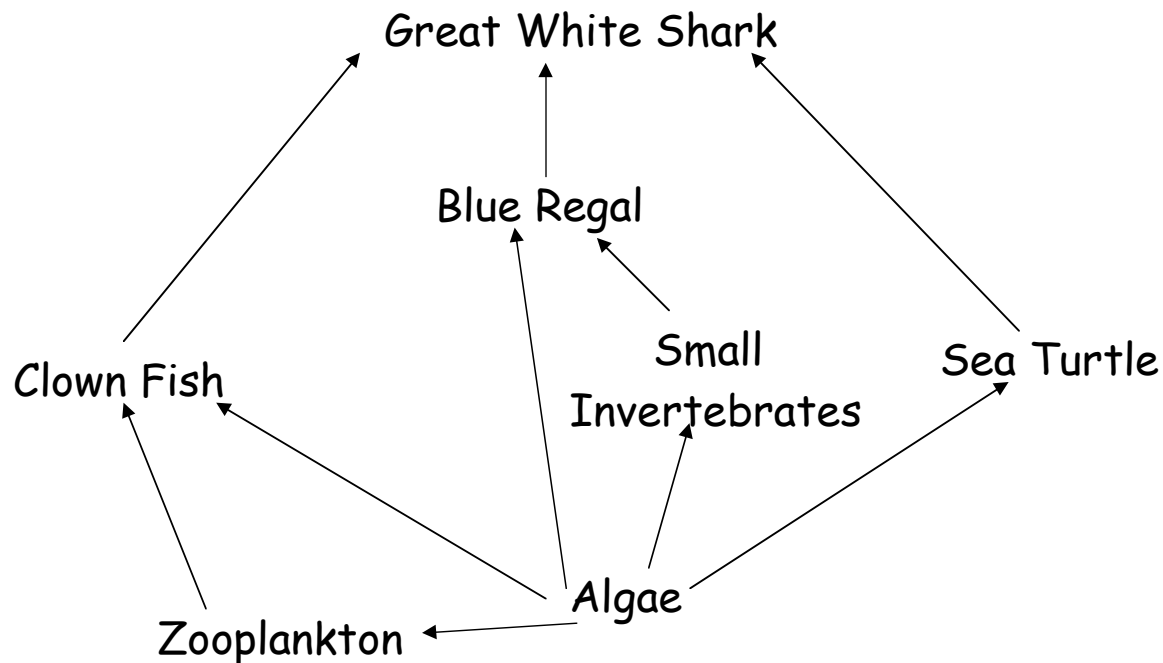


1. Write down two food chains from this food web.



Questions

1. What will happen to the number of clown fish if the sharks become vegetarian?
2. What effect will this have on the number of zooplankton?
3. What will happen to the Blue Regal fish if a disease wipes out the small invertebrates.



Foxes are predators because they hunt rabbits and eat them. The rabbits are their prey. In the 1950s a disease called myxomatosis killed many of the rabbits in the countryside.

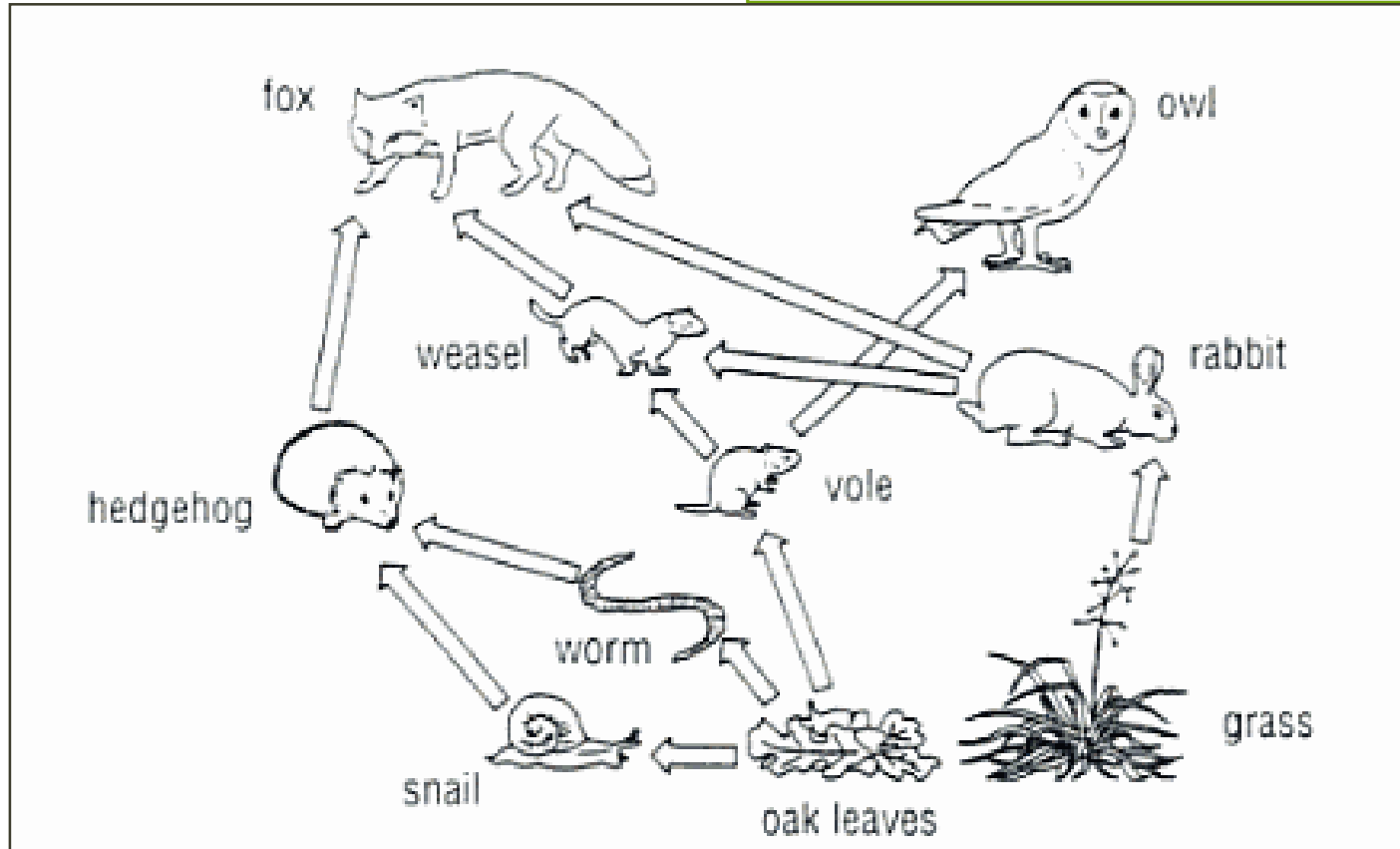


- Describe two effects of this disease on the food chain.
- Why do you think that more foxes were seen in towns after that time?

A large number of deer once lived on the Kaibab plateau north of the Grand Canyon in Arizona, USA. In 1907 their predators wolves, coyotes and pumas, were killed to protect the deer. What do you think happened?



Forest Food Web



- Name 2 **carnivores** from this web.
- Name 2 **herbivores** from this web.
- Name 2 **producers** from this web.
- If all foxes died, *what do you think would happen* to the number of: (a) Hedgehogs? (b) Snails?