

Science KS3 Interdependence and competition



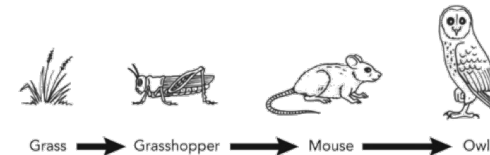
Glossary:

- **Biomass**
Living material.
- **Carnivore**
Animal that only eats animals.
- **Community**
All the populations of different organisms in a habitat.
- **Competition**
Plants and animals compete with each other for resources.
- **Consumer**
Consumes food.
- **Decomposer**
Breakdown of dead plant and animal matter (bacteria and fungi).
- **Ecosystem**
A community and its habitat.
- **Fertile**
Able to produce offspring.
- **Habitat**
Where the organisms live.
- **Herbivore**
Animal that only eats plants.
- **Organism**
An individual living thing.
- **Pollination**
Transferring pollen from one plant to another.
- **Population**
All the members of a species living in a habitat.
- **Predator**
Animal that hunts prey.
- **Prey**
Animal hunted by a predator.
- **Producer**
Makes food via photosynthesis (plants).
- **Species**
A group of similar organisms which can breed and produce fertile offspring.
- **Trophic level**
Level of a food chain.

Activities

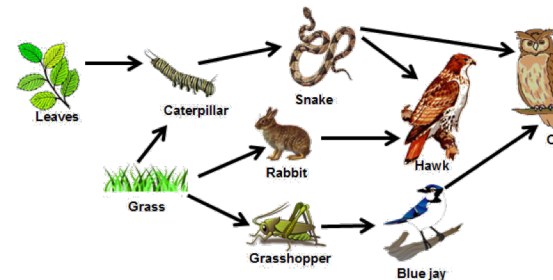
- Explain why decomposers are important in an ecosystem. In your answer you should use and define the terms: habitat, decomposer, ecosystem.

- Look carefully at the following food chain.



- a) Name a predator
- b) Name a prey
- c) Name the producer
- d) Name a consumer
- e) Name the herbivore.

- Look at the following food web. A disease kills the trees on which the caterpillars feed. What impact would a decrease in the number of leaves have on the number of snakes? Why?



- Explain why pollination is important in the production of the following food:

- a) Strawberries
- b) Courgette
- c) Beef
- d) Bread.

- A food chain contains plants, partridges and foxes. Partridges feed on weeds and insects. If a farmer sprayed their crops with chemicals to kill weeds and insects what would happen to the number of foxes? Why?

QUICK QUESTIONS:

1. Name two things plants compete for.
2. Name two things animals compete for.
3. List 3 reasons why not all the energy found in plants is transferred up through the food chain to the top carnivore.
4. Name two types of decomposer.
5. What is the difference between a herbivore and a carnivore?
6. What is the difference between a producer and a consumer?
7. What provides the energy in most food chains?

1. Ecosystems

- Individual **organisms** which live together in particular environmental conditions in a **habitat** form an **ecosystem**.
- In a stable ecosystem there are:
 - Producers** of food (plants)
 - Consumers** (animals)
 - Decomposers** (bacteria and fungi).
- All** animals depend on plants for their survival.

2. Decomposers

- Decomposers are normally bacteria or fungi.
- They **breakdown dead plant and animal matter**, releasing nutrients into the soil for plants to absorb.
- If decomposers were removed from a habitat then organisms would not be broken down when they die.



3. Food chains

- Food chains are **feeding relationships** between **organisms** in a **habitat**.
- Food chains start with **producers**, normally plants, which produce food via **photosynthesis**.
- Energy from the sun is used in photosynthesis.



4. Energy and biomass in food chains

- The arrows in a food chain show the flow of **biomass** or **energy** through the chain.
- Not all the energy found in the biomass of plants at the start of a food chain makes it into the biomass of the **top predator**.
- This is because not all of the organism is eaten (e.g. roots, bones) and some energy is transferred via faeces, urine, respiration, movement or heat.

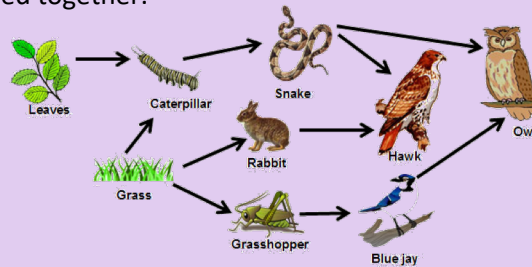


KS3 Spine

Interdependence and Competition

5. Food webs

- A food web shows all the food chains in an ecosystem joined together.



6. Competition in plants and animals

- In any ecosystem there is **competition** among species for the energy resources and the materials they need to live.
- Plants** compete for light, space, water and mineral ions.
- Animals** compete for food, mates and territory.

7. Predator – prey relationships

- Predators** hunt and eat other organisms.
- Prey** are the organisms eaten by the predator.
- The **populations** of predators and prey depend on each other.
- If the population of prey decreases then so will the population of predators.

8. Pollination and food security

- Pollinating insects** are not just vital in food webs as a source of food, they are also needed to pollinate flowers to produce seeds and fruit.
- The majority of food we eat comes from food chains which rely on plants which need to be pollinated.

