Knowledge Organiser: Year 7: - Interdependence

Section 1: Key Words

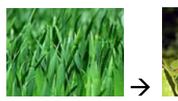
Food chain	show the feeding relationships and energy flow in a habitat – always starts with a producer
Food web	a system of interlocking and interdependent food chains
Herbivore	an animal that feeds on plants.
Carnivore	an animal that feeds on other animals.
Prey	The animals that predators feed on.
Predator	Kill for food. They are either secondary or tertiary consumers
Producer	Green plants and algae. They make food by photosynthesis.
Primary Consumer	Green plants and algae. They make food by photosynthesis.
Secondary (tertiary etc) consumer	Usually eat animal material - they are carnivores. For example cats, dogs and lions.
Scavenger	Feed on dead animals. For example, crows, vultures and hyenas are scavengers
Habitat	the place where an organism lives
Adaptation	characteristic of an organism that improves its chances of surviving and/or reproducing
Omnivore	An animal that eats plants and other animals
Population	all the members of a single species that live in a habitat
Environment	all the conditions that surround a living organism
Ecosystem	a habitat and all the organisms living in it
Decomposer	Feed on dead and decaying organisms, and on the undigested parts of plant and animal matter in faeces.
Autotroph	An organism that makes its own food

Section 2: Food chains

Food chains always follow the same format

Producer → primary consumer → secondary consumer → tertiary consumer → quaternary consumer

Grass → grasshopper → mouse → weasel → owl



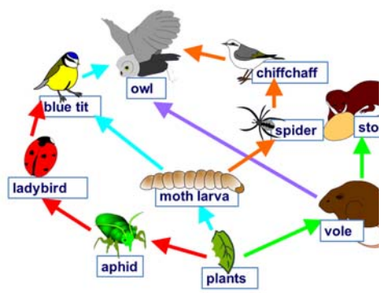


Section 3: Food webs

Food chains can combine together to make a food web.

Food webs show complex interaction in an ecosystem

- plants → aphid → ladybird → blue bird → owl
- plants → moth larva → blue bird → owl
- plants → moth larva → spider → chiffchaff → owl
- plants → vole → stoat
- plants → vole → owl



Section 4: Factors organisms compete for

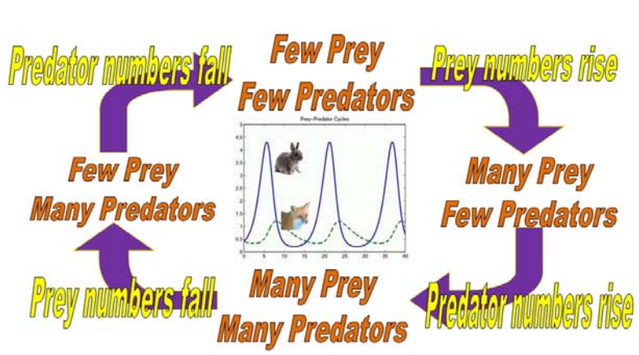
Plant	Animal
Sunlight	Territory
Space	Food
Water	Water
Mineral	Mates
Carbon dioxide	shelter

Section 5: Energy flow in food webs

- Energy flows from the producer to the final consumer in a food chain or web.
- Energy decreases at every level of the chain/web. It is lost at each level by:

Egestion	Not all the food eaten by the animal is digested. Some comes straights through becoming faeces
Respiration	Energy is releases for movement and warmth
Excretion	Some energy is lost in products like urine and sweat

Section 5: Predator-prey interactions



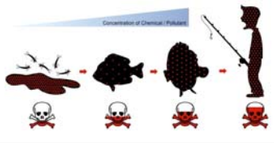
Example:

Increasing the number of rabbits will mean there is more food for the foxes. This increase in food means more foxes can be supported in the fox population so the number increases. The rise in the number of foxes means more rabbits get eaten. As more rabbits get eaten the rabbit population decreases. Fewer rabbits means there is less food for the foxes. Less food for foxes means the fox population decreases. A decrease in the fox population means there are fewer predators so the rabbit population will rise. And the cycle starts again.

Section 6: Environmental changes, toxic materials, diseases and populations

	Effect on population
Change in environment	Those that can adapt to the new environment will survive, those that can't will die out
Toxic material	Population will become polluted and could become ill. If they can't adapt the population will decrease and eventually become extinct
Habitat loss	Population will have no-where to live. If they cannot move/find somewhere else to live the population will decrease and they will become extinct
Disease	A new disease can whip out a population if the population doesn't become immune quickly enough.
Predators	A new disease can whip out a population if the population doesn't adapt quickly enough. (develop protection, camouflage etc)
Loss of an organism	If a species is lot in an ecosystem it can affect the other organisms living there. For example if all the mice died the cats would have no food so they would die too.

Section 8: biomagnification



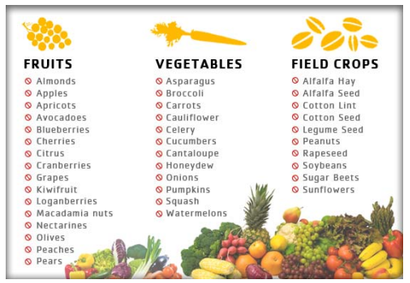
Toxin is taken up in a small amount by the primary consumer. Consumers further along the food web eat more of the previous level. This means they take in more toxin. Eventually toxin builds up to fatal level in higher level consumer (3rd/4th consumer).

Section 7: Insects and human food supplies

Insects are vital for pollination of plants. As a result plants are adapted to attract them

Nectar	Sweet taste to attract insects
Scent/perfume	Pleasant smell to attract insects
Bright colours	Bright colour and patterns can attract insects (some plants mimic insects to attract them like a mate would)
Moderate amount of pollen	Prevents wastage of pollen
Pollen is sticky or spikey	Sticks to insects to be transferred between plants
Anthers and stigma inside the flower	Pollinators/insects can contact them
Stigma is sticky	Pollen attaches easily

Here are some of the foods pollinated by just bees (let alone other insects!)



If the pollinators died out we would suffer food shortages. Reasons pollinators may die

- Climate change
- Habitat loss
- Disease
- Pesticides
- Pollution – masking scent, colours etc