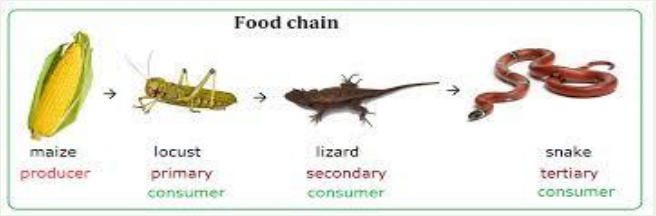
Interdependence

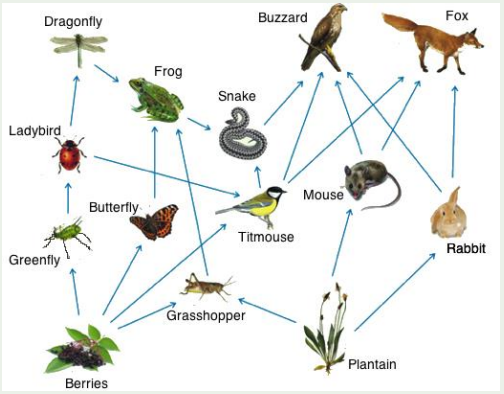
Key words

Photosynthesis	The process plants use to make their own food, glucose.
Algae	Green uni or multi cellular organisms that perform photosynthesis and live underwater.
Producer	Organism that makes its own food using photosynthesis e.g plants and algae
Consumer	Organisms that eat other organisms.
Food chain	Diagram that shows the transfer of energy between organisms.
Trophic level	The position of an organism in a food chain or food web.
Biomass	The mass of living tissue of an organism.
Predator	An animal that eats other animals.
Prey	An animal that is eaten by another animal.
Carnivore	An animal who eats meat.
Omnivore	An animal who eats both plants and meat.
Herbivore	An animal who only eats plants.
Food web	A diagram showing a set of linked food chains.
Pyramid of numbers	A type of bar chart to represent the population of each organism in a food chain.
Interdependence	The way in which living organisms depend on each other to survive, grow and reproduce.
Population	The number of plants or animals of the same type living in the same area.
Ecosystem	The interaction between plants, animals and their habitat in a particular location.
Community	The collection of different types of organism present in an ecosystem.
Habitat	The area in which an organism lives.
Niche	A particular place or role that an organism has in an ecosystem.
Fertiliser	Chemical containing minerals, normally applied to soil.
Pesticide	A chemical used to kill pests such as insects to protect crops.
Bioaccumulation	The build up of toxic chemical inside organisms in a food chain.
Food security	Having enough food for the entire population to eat.

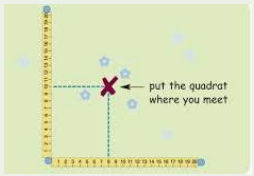
Key diagram – representing food chains



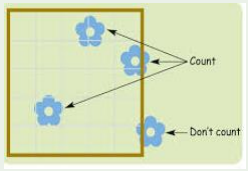
A FOOD WEB
What would happen if disease wiped out the mouse population?



Practical –investigation abundance of a population in a habitat (Quadrats)

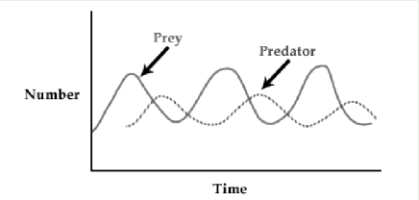


Coordinates must be chosen randomly



Calculate abundance: (area of field/area of quadrat) x mean number of organisms counted

Key process – describing predator prey relationships



After the prey numbers increase, the predator numbers increase (this is as the predators now have more food to eat). However, after a time, the predators eattoo many prey, and the prey numbers reduce. This leads to the predator numbers to decrease as they do not have enough to eat. This cycle repeats itself.

Key knowledge

Plants and algae are producers because they make their own food using energy from the sun.

A food chain always starts with a producer, which is usually a green plant.

Animals are consumers as they have to eat other organisms to survive.

A food chain ends with a consumer, an animal that eats a plant or another animal.

The last consumer in a food chain is known as an apex predator.

Arrows in a food chain/web show the direction of energy transfer from producer to apex predator.

The first consumer in a food chain is called the primary consumer, the second consumer the secondary consumer, and the third consumer is a tertiary consumer.

In a pyramid of numbers, the bars are drawn to scale – the more organisms it represents, the wider the bar. The producer in the food chain always goes at the bottom of a pyramid of numbers.

Energy is lost to the surroundings as we go from one level to the next in a food chain.

A food web is just several food chains joined together.

A food web can show how many species rely on another for food.

Predator and prey populations tend to follow one another, particularly if a predator feeds on only one type of prey

Biodiversity is the variety of living organisms in an ecosystem. Ecosystems with high biodiversity are known to be stable as a change to a food chain would have less effect compared to an ecosystem with a low biodiversity.

If something (disease, natural disaster, human activity) affects the population of one organism in a food web this can have an impact on all the populations.

All the food humans eat rely on plants. This includes meat because animals such as pigs, sheep and cattle eat plants. Plants rely on pollination by wind or insects for reproduction. If the population of pollinating insects goes down, it reduces the amount of food for us to eat. This can reduce food security.

Sometimes chemicals such as pesticides or fertilisers are passed along the food chain, this can result in **bioaccumulation** as the chemical builds up in the body of organisms higher up the food chain. **Bioaccumulation** can lead to poisoning and death.