



Year 7 Science knowledge organiser

Module – Ecosystems

Topic – Interdependence and plant reproduction

Length of topic – Approx. 12 lessons

Method of assessment – Levelled assessment

Links to prior learning

KS2 Year 5 Living things and their environment topic

- Describe the life process of reproduction in some plants and animals.

KS2 Year 6 Living things and their environment topic

- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- Give reasons for classifying plants and animals based on specific characteristics

Knowledge to be taught.

- Organisms in a food web (decomposers, producers and consumers) depend on each other for nutrients. So, a change in one population leads to changes in others.
- The population of a species is affected by the number of its predators and prey, disease, pollution and competition between individuals for limited resources such as water and nutrients.
- Plants have adaptations to disperse seeds using wind, water or animals.
- Plants reproduce sexually to produce seeds, which are formed following fertilisation in the ovary.

Skills to be covered

- Interpreting graphs to construct explanations and justify opinions
- Discussing limitations to food chains and presenting data
- Communicating ideas

Working scientifically strands covered

Analyse patterns	✓
Discuss limitations	✓
Draw conclusions	✓
Present data	✓
Communicate ideas	✓
Construct explanations	✓
Critique claims	✓
Justify opinions	✓
Collect data	✓
Devise questions	✓
Plan variables	
Test hypothesis	
Estimate risks	
Examine consequences	
Review theories	
Interrogate	

Assessment

Levelled assessment – Rock pool ecosystem

Pupils will need to show they can:

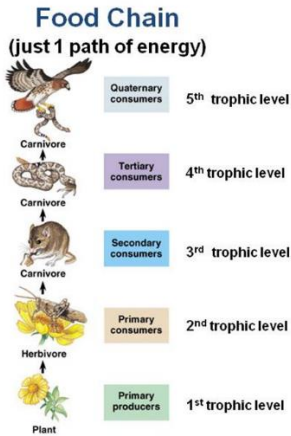
- Draw a simple food web that links at least three food chains.
- Identify the organisms in your food web that are producers, prey, predator, primary consumer...
- Identified and stated why producers are called so
- Described how the prey population changes when predators eat them.
- Explained how a change in the prey population effects the predator population.
- Explained what happens to the amount of pesticides in the food chains at each level



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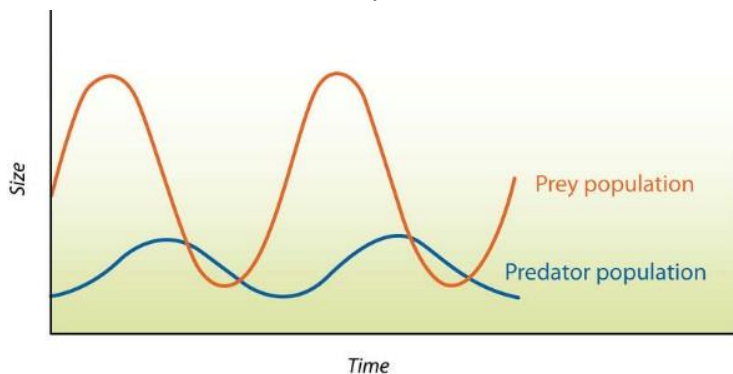
Facts

Simple food chains show what organisms eat and the transfer of energy through the organisms



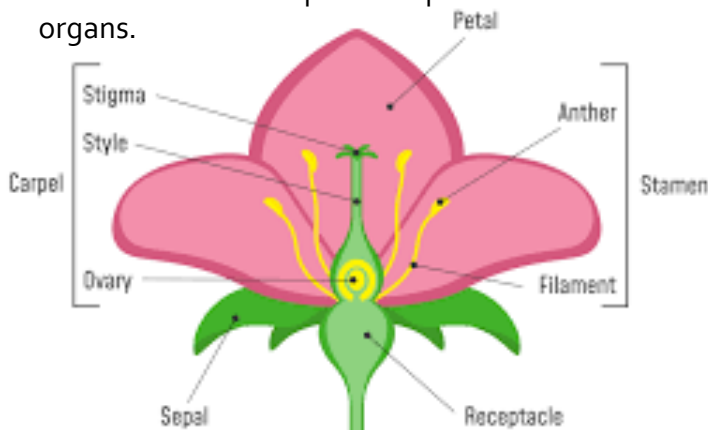
The arrow points to the eater and shows the transfer of energy.

The population of a species is affected by the number of its predators and prey and numbers will rise and fall in a cycle



Insects are needed to pollinate food crops.

Flowers contain the plant's reproductive organs.



Pollen can be carried by the wind, pollinating insects or other animals.

Keywords

Bioaccumulation: The build-up of pesticides or poisons over time that have an effect on the organisms in a food web.

Carpel: The female part of the flower, made up of the stigma where the pollen lands, style and ovary.

Consumer: Animal that eats other animals or plants.

Decomposer: Organism that breaks down dead plant and animal material so nutrients can be recycled back to the soil or water.

Ecosystem: The living things in a given area and their non-living environment.

Environment: The surrounding air, water and soil where an organism lives.

Fertilisation: Joining of a nucleus from a male and female sex cell.

Fruit: Structure that the ovary becomes after fertilisation, which contains seeds.

Food chain: Part of a food web, starting with a producer, ending with a top predator.

Food web: Shows how food chains in an ecosystem are linked.

Ovules: Female sex cells in plants found in the ovary.

Pollen: Contains the plant male sex cells found on the stamens.

Pollination: Transfer of pollen from the male part of the flower to the female part of the flower on the same or another plant.

Population: Group of the same species living in an area.

Producer: Green plant or algae that makes its own food using sunlight.

Seed: Structure that contains the embryo of a new plant.