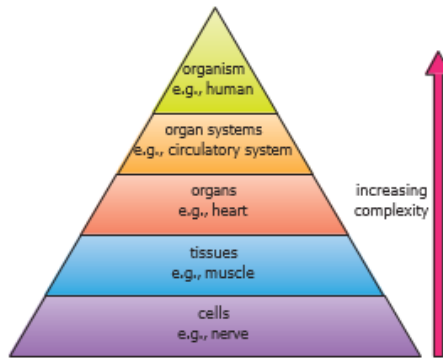
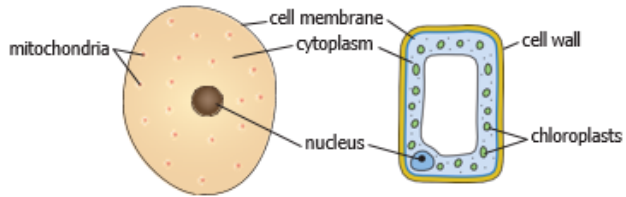


## Levels of organisation



## Plant and animal cells

- To be able to **observe** a cell we need to use a **microscope**, this magnifies the cell to a point to which we can see it
- Plant and animal cells have small structures inside known as **organelles**, each of these performs a certain role which allows the cell to survive



## Specialised cells

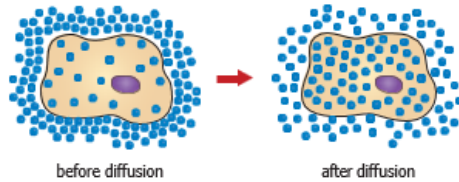
- Specialised cells** are designed to carry out a particular function, because of this they have specific features and adaptations to allow them to carry this out
- Both plant and animal cells can be specialised, with these specialised cells working together to help the organism to survive

## Organs

- An organ is a group of tissues that have the same function
- They can work with other organs in an **organ system**, such as the respiratory system which uses organs like the heart and lungs to transfer oxygen around the body
- Vital organs** are the organs that need to keep functioning for an **organism** to stay alive, e.g. the heart

## Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During diffusion particles move from an area of **high concentration**, to an area of **low concentration**



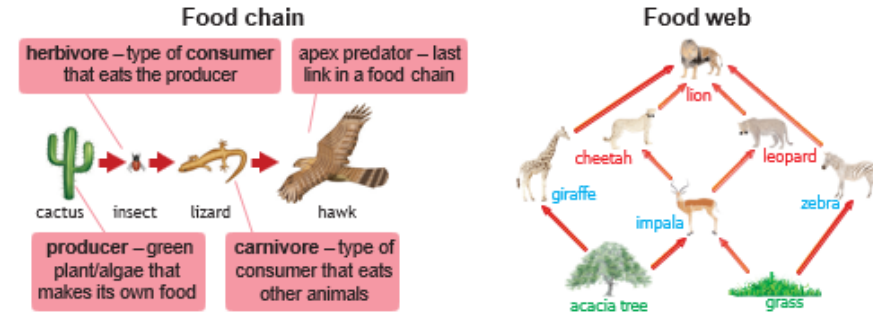
- Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave

## Disruption to food chains

- Interdependence** is the way in which living organisms rely on each other to survive
- A food chain will be disrupted if one of the organisms die out
- If the **producer** dies out the rest of the food chain will also die out unless they have a different food source
- If the **consumer** population die out the number of organisms which they eat will increase unless they are eaten by another organism
- Bioaccumulation** is the process by which chemicals such as pesticides and insecticides build up along a food chain

## Food chains and webs

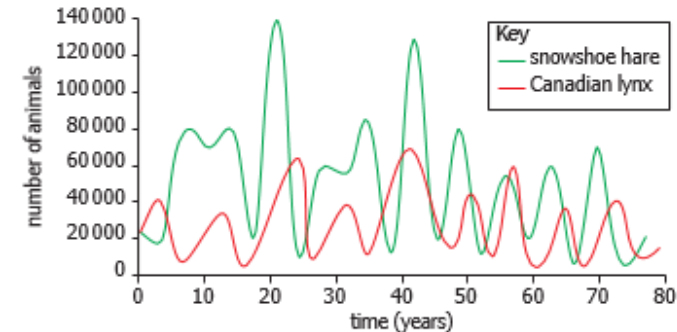
- Food chains** show the direction in which energy flows when one organism eats another
- The direction of the arrows represent the direction in which the energy flows
- Food webs** show how a number of different food chains are connected



- Producers** are the organisms which start the food chain, they convert energy from the Sun, making their own food, these are often plants
- Prey** are organisms which are eaten by other organisms
- Predators** are the organisms which eat the prey

## Competition

- Competition** is the process in which organisms compete with one another for resources
- Animals compete for food, water, space and mates
- Plants compete for light, water, space and minerals
- The best competitors are those who have adapted in order to best gain these resources
- As the number of a predator in a population increases the number of the prey will decrease as more are being eaten
- As the number of the predator decreases the number of the prey will increase as less are being eaten
- The relationship between the predator and the prey is known as a **predator-prey relationship**



## Ecosystems

- All of the organisms which live in one area are known as a **population**
- An **ecosystem** is all of the organisms which are found in a particular location and the area in which they live in, both the living and non-living features
- A **community** are all of the areas in an ecosystem, the area in which the organisms live in is known as the **habitat**
- A **niche** is the specific role in which an organism has within an ecosystem, for example a panda's diet consists of 99 % bamboo

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Question • Progress • Succeed  
**Knowledge organiser**  
**B1**

### Key terms

Make sure you can write definitions for these key terms.

Bioaccumulation Cell Community Competition  
Concentration Consumer Diffusion Ecosystem Food  
web Habitat Interdependence Microscope Niche  
Nucleus Organ Organisms Organ system Predator  
Prey Producer Population Specialised cells Tissue