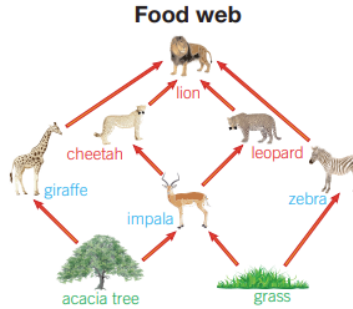
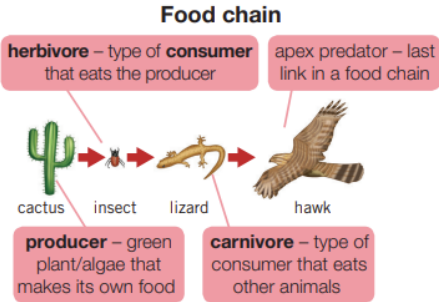


Food Chains and Food Webs

- **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

Disruptions to Food Chains

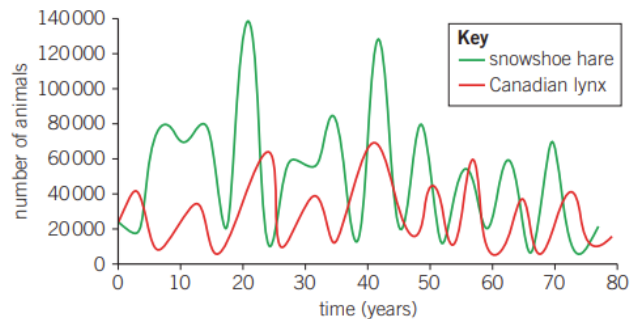
- **Interdependence** is the way in which living organisms rely on each other to survive
- A food chain will be disrupted if one of the organisms die out
- If the producer dies out the rest of the food chain will also die out unless they have a different food source
- If the **consumer** population die 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

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

Competitions and Boiling Points

- **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**



Key words and Vocabulary

Anther, bioaccumulation, carpel, community, competition, consumer, ecosystem, fertilisation, food chain, food web, germination, habitat, interdependence, niche, ovary, ovule, petal, predator, prey, producer, pollen, pollination, population, seed, sepal, stamen, stigma, style

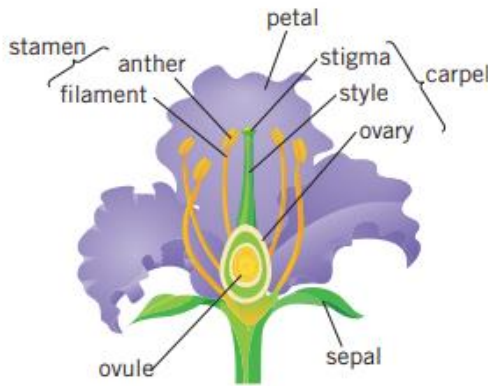


Parts of a Flower

Stamen

Male part of the flower

- The **anther** produces **pollen**
- The **filament** holds up the anther



Carpel

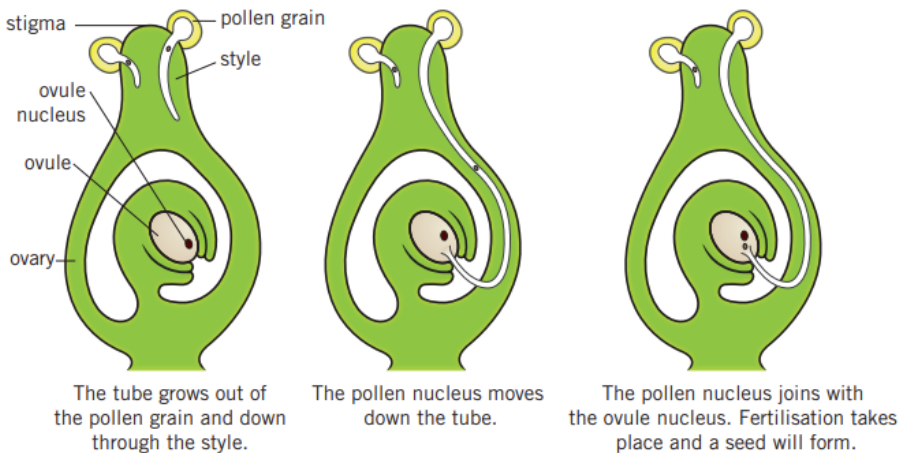
Female part of the flower

- The **stigma** is sticky to catch grains of pollen
- The **style** holds up the stigma
- The **ovary** contains **ovules**

Pollination and Fertilisation

Pollination is the **fertilisation** of the ovule, the point at which the pollen is transferred to the ovule from the anther to the stigma, there are two types of pollination

- Cross pollination is between two different types of plant
- Self pollination happens within the same plant



Germination is the process in which the **seed** begins to grow, for this to occur the seed needs:

- Water to allow the seed to swell and grow and for the embryo to start growing
- Oxygen for that the cell can start respiring to release energy for germination
- Warmth to allow the chemical reactions to start to occur within the seed

Key words and Vocabulary

Anther, bioaccumulation, carpel, community, competition, consumer, ecosystem, fertilisation, food chain, food web, germination, habitat, interdependence, niche, ovary, ovule, petal, predator, prey, producer, pollen, pollination, population, seed, sepal, stamen, stigma, style



Change of State

changes of state

state of matter

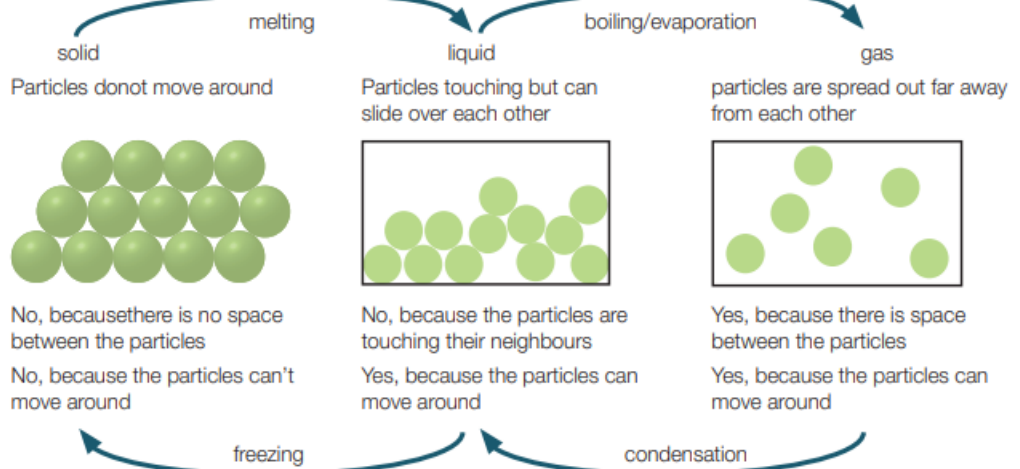
how do the particles move?

arrangement of particles

can it be compressed?

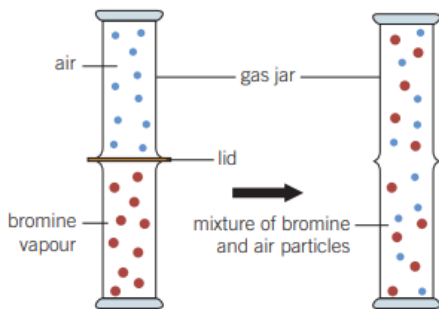
can it flow?

changes of state



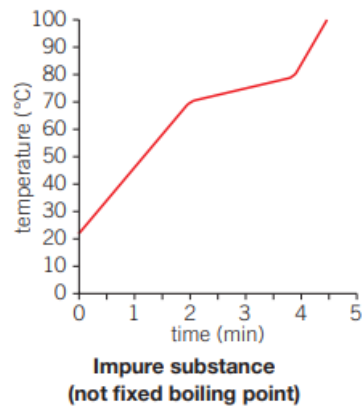
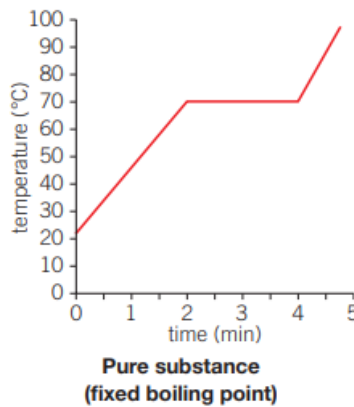
Diffusion

- **Diffusion** is the movement of particles from an area of high concentration (lots of the same particle) to an area of low concentration (not a lot of the same particle)
- It is a random process which does not need energy
- The speed of diffusion can be increased by:
 - A higher temperature
 - Smaller particles diffusing
 - A gas rather than a liquid
- Diffusion does not happen in a solid as the particles can't flow



Melting and Boiling Points

- The **melting point** of a substance is the temperature at which it turns from a solid to a liquid, or a liquid to a solid
- The **boiling point** of a substance is the temperature at which it turns from a liquid to a gas or a gas to a liquid
- **Pure substances** have a fixed (sharp) boiling or melting point, whereas **impure substances** have a range which appears as a diagonal line on a graph



Key words and Vocabulary

boiling point, chromatography, condensation, diffusion, dissolve, distillation, evaporation, filtration, freezing, impure, substance, melting point, mixture, property, properties, pure substance, saturated solution, substance, soluble, solubility, solute, solution, solvent

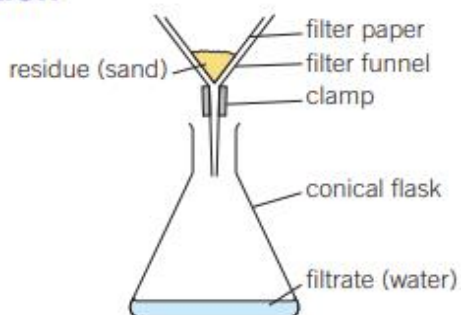


Mixtures

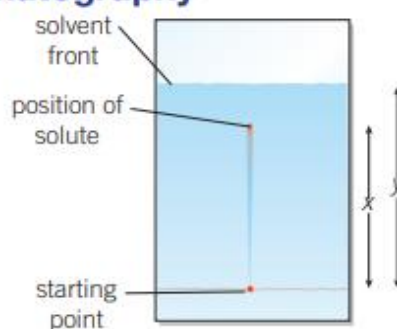
- **Mixtures** are different **substances** which are together, they are not chemically bonded and so are easy to separate
 - The substances which make up a mixture keep their own **properties** unlike those in a compound
 - A mixture is an **impure** substance as it does not have a fixed melting point, instead it has a range
-
- A **solution** is a type of mixture which is made up of two parts
 - A **solute** is the part which has dissolved in the solution
 - A **solvent** is the liquid part which the solute has dissolved into
-
- The **solubility** of a substance is a measure of how much of it will **dissolve**
 - Not all solutes will dissolve in all solvents
 - Solutes which do not dissolve are known as **insoluble**
 - Substances which do dissolve are known as **soluble**
 - The **solubility** of a substance can be increased by increasing the temperature of the solution or by stirring the solution
 - A **saturated solution** is one where the maximum amount of solute has dissolved in it, no more solute will be able to dissolve

Separating Mixtures

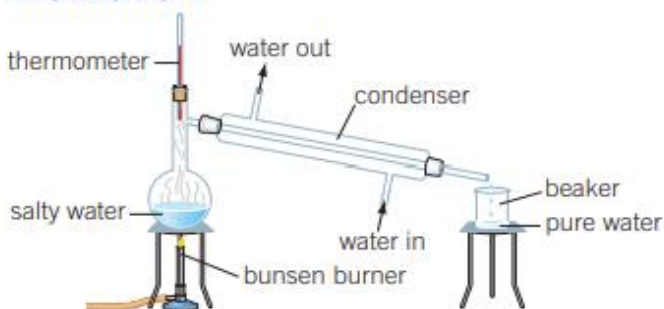
Filtration



Chromatography



Distillation



Evaporation



Key words and Vocabulary

boiling point, chromatography, condensation, diffusion, dissolve, distillation, evaporation, filtration, freezing, impure, substance, melting point, mixture, property, properties, pure substance, saturated solution, substance, soluble, solubility, solute, solution, solvent

