

Separating Solutions and Mechanical Mixtures

*Reminder: Solutions and mechanical mixtures are **both** _____ (made of more than 1 type of particle).

However, **solutions** are _____ geneous (look the same throughout), and **mechanical mixtures** are _____ geneous (variable in appearance; can see different types of particles throughout).

SEPARATING SOLUTIONS:

Because solutions look the same throughout, their particles are **difficult to separate**. The most common strategy involves **making either the solute or the solvent change state** (*i.e.* changing the solute from solid to liquid), so that it can be removed from the solution.

Definition:

The method of separating a solution into its components using paper.

Characteristics:

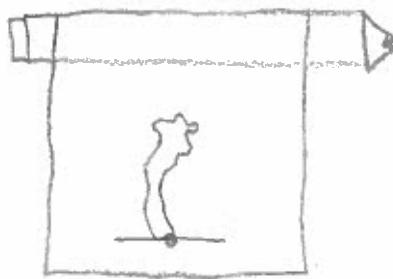
Chromatography only works if you use absorbent paper and NOT use permanent marker.

Examples:

Forensics that most scientists or C.S.I.'s use to find which type of ink was used.

Paper Chromatography

other?



Definition:

Evaporating solvent particles leave solution, while solute particles remain in greater concentration.

Characteristics:

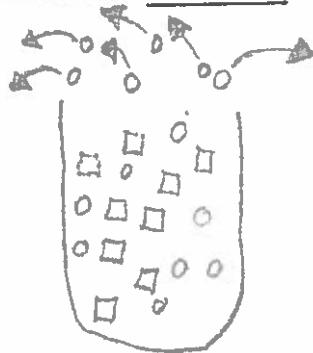
Change of state from a liquid to a gas. Adding heat.

Evaporation

Examples:

Boiling salt water to get the salt.

other?



Definition:

Method of separating a solution into its components that involves boiling and condensation.

Characteristics:

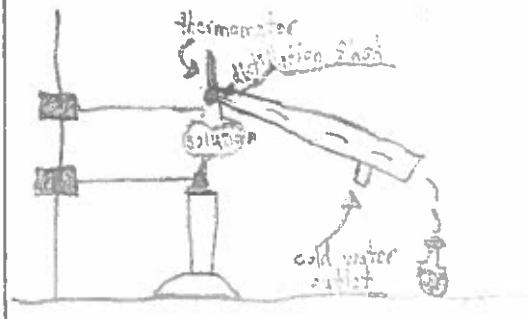
A tube that is closed but condensation can into the container. Then you need the buster burner to boil the water. Uses special equipment.

Distillation

Examples:

In a science lab if their separating substances and want to keep all the components separated.

other?



SEPARATING MECHANICAL MIXTURES:

Often easier than separating solutions, because the parts that make up a mechanical mixture are usually quite different from each other.

Definition:

Filtration is mechanical process of separating solids from liquids or gases using porous article of mass, such as paper or sandula

Characteristics:

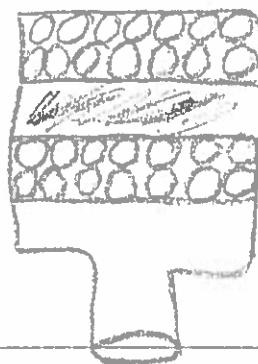
Filters can be different (e.g. paper filters and filters with rocks, sand, etc.)

Filtration

Examples:

- ① Filters which has charcoal on the insides like a Brita water filter.
- ② Coffee-makers

Other?



Definition:

Technique that involves separating substances on the basis of appearance, which may involve color, size, texture, composition.

Characteristics:

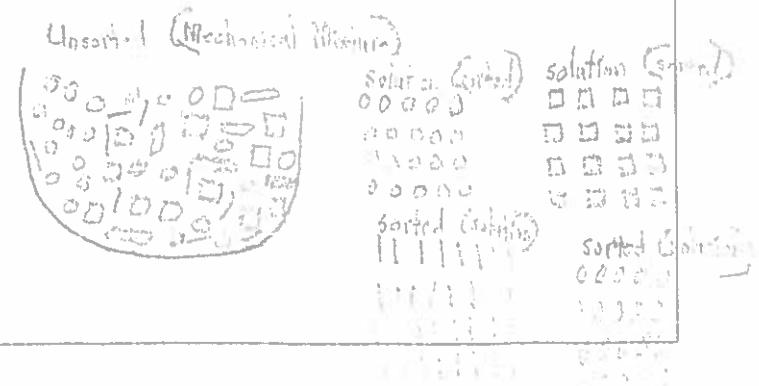
Hard to sort solutions because all the substances looks as if they were one.

Sorting

Examples:

Recycling bin with plastic, cardboard, paper, glass
Cash register with different coins or money that needs to be sorted

Other?



Definition:

Sifting is a great way to sort solids. Sifting consists of shaking or agitating a screen or mesh. While shaking the smaller solids fall through while larger pieces stay on top.

Characteristics:

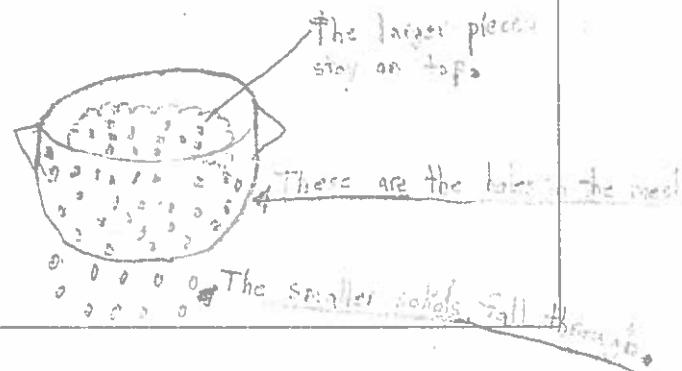
Sifts can come in many different ways. It can have smaller holes for smaller solids and larger holes for larger solids. Sifts are made from metal, plastic and tin.

Sifting

Examples:

When fishermen go fishing with nets (not poles) they use the nets like sifts. While the net passes through the water, the water goes through the holes, and the fish cannot go through the small holes. It is impossible for a fish to escape the net.

Other?



Definition:

Magnetic energy (magnetism) is energy that cause some types of metals to attract or pick away from certain other metals; iron, steel, and nickel are all magnetized.

Characteristics:

only works on some metals like iron.

Magnetism

Examples:

Tankard (Moves Cars), Compass (Attracts to the North. Pole)

Other?

