Science Knowledge Organiser

Year 4

Autumn (i)

Why are reversible changes scientifically useful?

Portable Knowledge -

A solid holds its own shape; a liquid takes the shape of a container and gas fills a container and will escape if there is no lid.

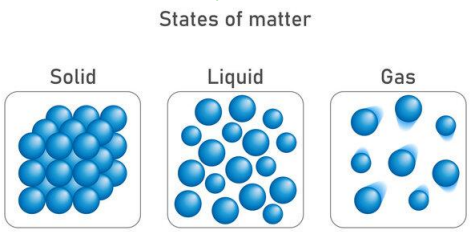
To know how habitats change throughout the year.

Habitats rarely stay the same. In spring and summer, plants emerge and grow; as seasons grow colder, many plants die off, lose their leaves, and many go dormant until the next seasonal growing period. Over longer periods of time, some species disappear, and new species may take their place. Sometimes the actions of people can change habitats.

To know the definitions of solids, liquids and gases.

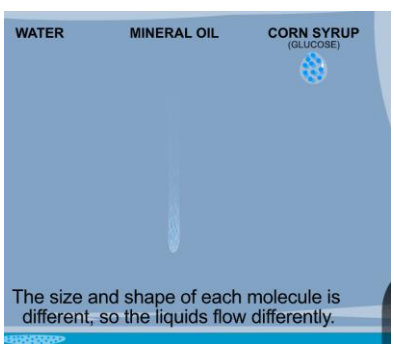
Solids
They stay in one place and can be held.
They keep their shape.
They always take up the same amount of space.
They do not spread out like gases.
Solids can be cut or shaped.
Even though they can be poured, sugar, salt and flour are all solids.

Liquids
They can flow or be poured easily. They are not easy to hold.
They change their shape depending on the container they are in.



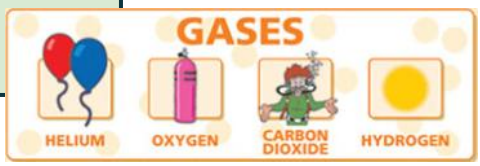
Gases
They are often invisible.
They do not have a fixed shape. They spread out and change their shape and volume to fill up whatever container they are in.
Gases can be squashed.

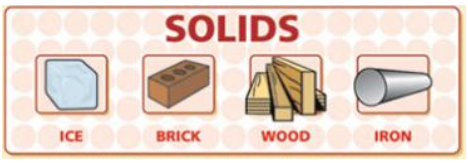
To investigate and explain if all liquids behave the same way.



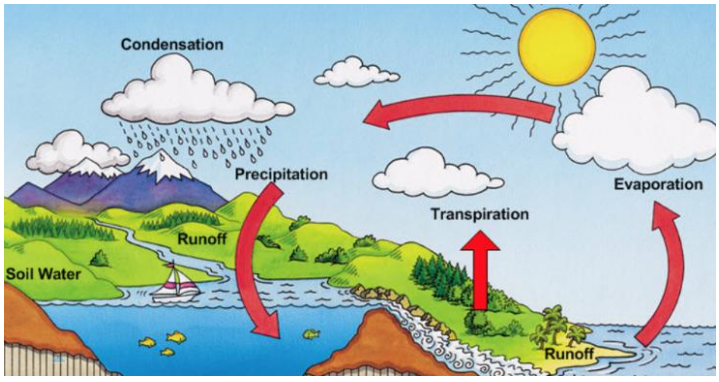
Liquids have their own characteristic properties.
Even if liquids look similar, they can have different properties.
To compare the properties of liquids, the liquids need to be tested in the same way. This enables us to perform a fair test.

To compare and group materials together according to whether they are solids, liquid or gases.





To know the part played by evaporation and condensation in the water cycle and the role of temperature.

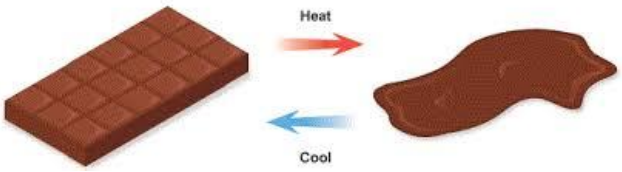


The water cycle describes how water evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation.

To define what a reversible change is and give examples of some.

A reversible change is when materials can be changed back to how they were before the reaction took place.

E.g. When ice melts to form water. It could be frozen back to ice again. Examples include freezing water to make ice or melting chocolate.



Core vocabulary

Evaporation - When water is heated and changes from a gas to a liquid.

Condensation - when water cools down and turns from liquid to gas.

State-there are three states of matter which make up everything.

Reversible- when something changes form but cannot change back to it's original state.