MATERIALS: REVERSIBLE AND IRREVERSIBLE CHANGES

CHARLES DICKENS PRIMARY SCHOOL

Year Five | Spring 2

KEY FACTS

- ☐ Materials can be changed by combining them with other materials. Sometimes these changes can be reversed, sometimes they cannot.

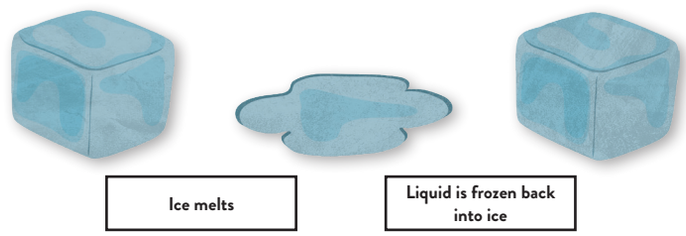
Reversible changes:

- ☐ **Separating mixtures**: a mixture of rice and water can be easily separated out again: neither the water nor the rice has changed.
- ☐ **Dissolving:** A material that dissolves is called a **solute**; the liquid in which it dissolves is the **solvent**; the resulting liquid is the **solution**.
- ☐ Some substances, such as salt and sugar, dissolve in water.
- ☐ Even though we cannot see them, we can tell that they are there by tasting the solution.
- ☐ Dissolving can be reversed by boiling. This causes the water to evaporate: (turn into a gas) and escape from the beaker. The salt or sugar remain. They are solids.

Irreversible changes

- ☐ Some changes result in the formation of new materials, for example combining eggs, flour, sugar and butter to make a cake, burning wood or making scrambled eggs.
- ☐ This kind of change is not usually reversible; we cannot get the original ingredients back.

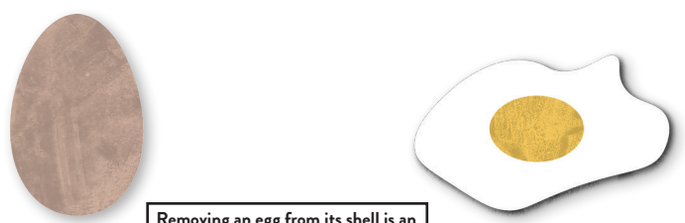
REVERSIBLE CHANGES



Ice melts

Liquid is frozen back into ice

IRREVERSIBLE CHANGES



Removing an egg from its shell is an irreversible change.

WORKING SCIENTIFICALLY

- OBSERVING
- COLLECTING AND RECORDING DATA
- PRESENTING FINDINGS
- TESTING/EXPERIMENTING
- MEASURING
- WRITING SCIENTIFICALLY

KEY VOCABULARY

- ☐ **dissolve:** to combine a solid with a liquid to make solution
- ☐ **distillation:** the process of capturing the liquid that has evaporated from a solution
- ☐ **evaporation:** the process by the which a liquid turns into a gas when heated
- ☐ **filtration:** the process of separating a mixture of solids and liquids using a filter
- ☐ **irreversible/chemical change:** a change that cannot be undone
- ☐ **mixture:** two or more substances that can be separated
- ☐ **reversible/physical change:** a change that can be undone
- ☐ **soluble:** a property of a solid which means that it can dissolve
- ☐ **solution:** mixture of solid and liquid in which the solid is no longer visible
- ☐ **solute:** the solid material that dissolves in a liquid
- ☐ **solvent:** the liquid into which a solid dissolves

SIGNIFICANT PEOPLE

Jabir ibn Hayyan was a 9th century Persian chemist known as the father of modern chemistry. He was the first person to discover the process of distillation.