Science- Year 5

Autumn 2– Changing and Separating Materials

In Science, I have learnt:

- that materials can be solids, liquids or gases.
- that some materials can change state when they are heated or cooled.
- that evaporation changes a liquid into a gas.
- that materials can be compared and grouped by their properties.
- that some materials are magnetic and some are non-magnetic.
- that some materials are absorbent, permeable or waterproof.
- how to plan a scientific enquiry and carry out a fair test.
- how to use evidence to draw conclusions and explain findings.

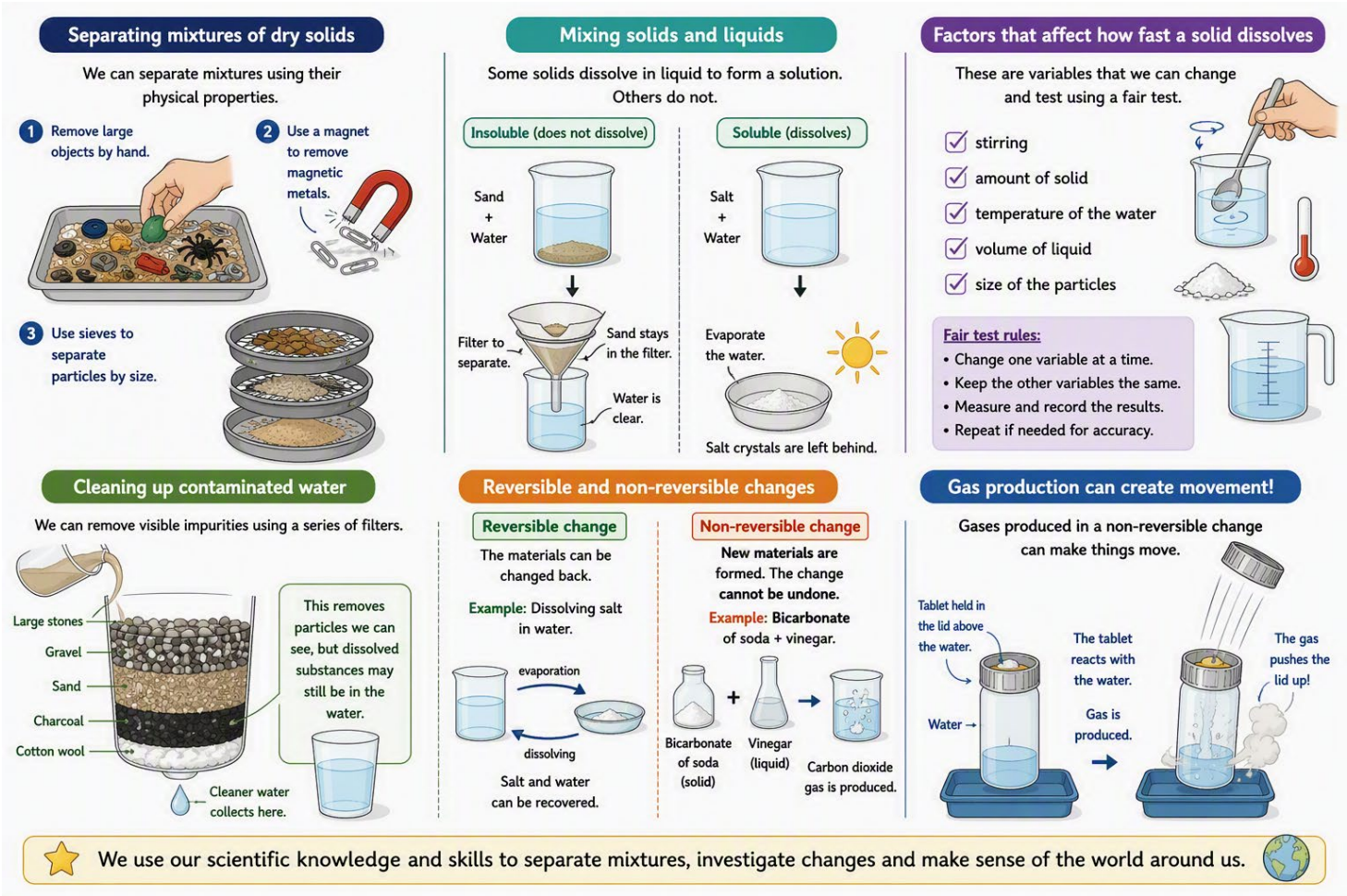
absorbent, evaporation, solid, gas, liquid, magnetic, non-magnetic, permeable, property, solid, waterproof

In this topic, I will learn:

- I can explain how mixtures can be separated using their physical properties.
- I can compare and classify materials as **soluble** or **insoluble**.
- I know that dissolving forms a **solution** and is a **reversible change**.
- I can explain how sieving, filtering and evaporation are used to separate mixtures.
- I can investigate the factors that affect how quickly a solid dissolves.
- I can explain how contaminated water can be cleaned using a series of filters.
- I know that some changes are **non-reversible** because new materials are formed.
- I can identify evidence of chemical changes, including the production of gases.

Working Scientifically

- I can make observations and use scientific vocabulary to describe changes.
- I can group and classify materials based on their properties.
- I can make predictions and test them through scientific enquiries.
- I can plan and carry out comparative and fair tests using variables.
- I can record and interpret results to draw evidence-based conclusions.



Glossary

- **contamination** 💧 : when something clean gets mixed with something dirty, making it unclean or unsafe
- **dissolve** 🧂 : a solid breaks down and combines with a liquid, forming a mixture
- **filter** 🧪 : to use a special tool or process to separate materials
- **insoluble** 🚫 💧 : a material that does not dissolve in a liquid
- **non-reversible** 🔁 ❌ : a material change that cannot be reversed; new materials are produced
- **reaction** ⚗️ : two or more materials mixed together change to produce new materials
- **reversible** 🔁 ✅ : a material change where all materials involved can be changed back to their original state
- **saturated** 💦 : when no more solid can be dissolved into a liquid
- **separate** ↔: to take apart a mixture of dry materials or wet and dry materials
- **sieve** 🕳️ : to separate solid materials from a mixture
- **soluble** ✅ 💧 : a material that dissolves in a liquid to form a solution
- **solution** 🥛 : a mixture containing solids that have dissolved in a liquid
- **conclusion** 📋 : to draw together evidence to find patterns and answers
- **evidence** 🔍 : information from observations and measurements that supports or disproves ideas
- **fair test** ⚖️ : an enquiry where one variable is changed and others are kept the same
- **predict** 🔮 : to use what you already know to work out what might happen
- **variable** 🔢 : something that can be changed, measured or observed in an enquiry
- **carbon dioxide** 🌫️ : a gas in the air
- **evaporation** 🌞 💧 : the change from liquid to gas; a process used to remove liquid from a mixture, leaving the solid behind
- **gas** 💨 : a state of matter that changes shape and volume to fill the space it is in