SCIENCE: MATERIALS

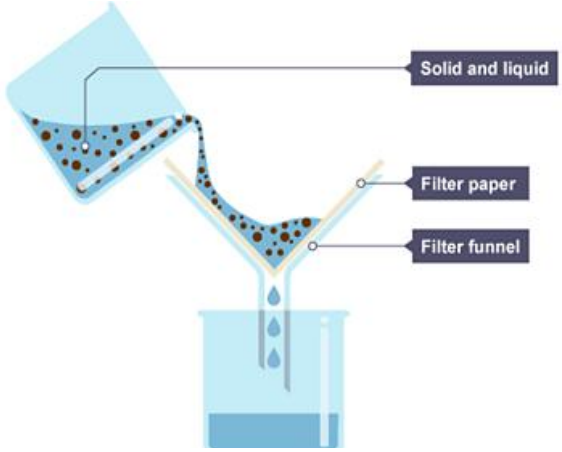
Key Vocabulary

contamination, dissolve, filter, insoluble, non-reversible, react, reaction, reversible, saturated, separate, sieve, soluble, solution, accurate, comparative test, control variable, conclude, conclusion, data, evidence, explain, explanation, evaluate, fair test, observe, pattern, predict, prediction, secondary source, variable, crystal, crystalline

Working Scientifically

● Planning different types of scientific enquiries to answer questions, including recognising, and controlling variables, where necessary. ● Using test results to make predictions to set up further comparative and fair tests. ● Learn to use apparatus and techniques, such as filtering, sieving and evaporating, to separate materials. ● Reporting and presenting findings from enquiries

Diagram: **Filtration**



Must – know knowledge

Dissolving is a process in which a solid substance mixes with a liquid to form a uniform mixture. It involves the breaking down of the solid into very small pieces, which disperse throughout the liquid to create a solution.

If sugar or salt is mixed with water, both solids dissolve because they are water-soluble. In a solution the particles of sugar or salt are evenly spread and light passes through the mixture, which is translucent. When solids do not dissolve, their particles cloud the mixture and form a suspension, such as flour in water, and the suspended particles can be removed using a filter.

There is a limit to how much of a solid can be dissolved in a given amount of water. When no more of the solute (salt, sugar) can be dissolved in the solvent (water) the solution is said to be saturated. If the water is heated, more salt or sugar will dissolve. As the liquid cools some solid will reappear from the solution (such as the sugar at the bottom of a cold mug of tea). Sugar and salt both dissolve in vinegar. Sugar dissolves faster than salt.

Mixtures can be separated using methods such as filtering, sieving, and evaporating.

Reversible changes are those in which the composition of the materials involved remains unchanged, and where by altering the conditions it is possible to return the materials to their original state.

Diagram: **Sieving**

Experiment: **How can we clean up contaminated water?**