

Particle Theory

Summary: This chemistry unit explains the interactions of different chemicals on the particle level. We will explore the changes in the energy and the particle arrangement in solids, liquids and gases. The children will then be able to apply this knowledge to reactions using the particle theory model.

Threshold Concepts

Questioning and Predicting
 Classification and Identifying
 Observing and Pattern Finding
 Describing and Explaining
 Analyse and Evaluate

Knowledge Areas Classifying, identifying, observing, recording, describing, explaining, finding patterns, analyse, evaluate, apply

Questioning & Predicting	Grouping & Classifying	Identifying	Observing	Recording	Describing	Explaining	Finding Patterns	Analyse	Evaluate	Apply
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Classifying

Classifying materials based on their state of matter, for example: water, ice and water vapor.

Observing

Observe things changing state of matter: melting, condensing, evaporating, freezing. Observing chemical reactions and identifying signs that one has occurred.

Recording

LKS2 – begin to use blank tables to organise data collection from experiments. Draw scientific diagrams.

UKS2 – devise own tables/charts for recording and represent temperature recording experiments as a line graph.

Describing

Describe the arrangement of particles in a solid, liquid and gas. Describe what happens when particles gain or lose energy to the arrangement and state of matter.

Explaining

Explain how a change of state can be used to separate some mixtures – salt and water mixture.

Finding Patterns

Find patterns in chemical reactions. What observable changes are there when a chemical reaction has occurred and are there patterns?

Apply

Apply knowledge of particle arrangement in solids, liquids and gasses to mixing and separating. Advanced challenge – to apply particle theory to chemical reactions.

