

A particle model to describe differences between pure substances and...

use a particle model to describe differences between pure substances and mixtures and apply understanding of properties of substances to separate mixtures

Learning intention

- use a particle model to describe differences between pure substances and mixtures and apply understanding of properties of substances to separate mixtures

Teach and model

- using representations of particles to show the difference between samples of pure substances and mixtures, and identifying examples of each
- examining different solutions and identifying the solvent and solute
- investigating and using a range of physical separation techniques such as filtration, decantation, evaporation, crystallisation, chromatography and distillation

Check understanding

- Explain the main idea in a particle model to describe differences between pure substances and... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.