▶ Video explanation (YouTube Short) · Instagram

Exploring Mixtures and their Separation: Chapter Introduction

1. The hook

Muddy water settles in minutes; milk never does. Both are **mixtures**, like most materials around us (air, sea water, milk, soil). The difference is **particle size**.

2. Three kinds of mixtures

Type	Particle size	Settles?	Light beam	Example
Solution	< 1 nm	No	Not visible	Salt water
Colloid	1–1000 nm	No	Visible (Tyndall effect)	Milk
Suspension	> 1000 nm	Yes	Scattered/blocked	Muddy water

3. Separating mixtures

Method	Separates	Example
Filtration	insoluble solid from liquid	sand + water
Evaporation	dissolved solid from solvent	salt from sea water
Chromatography	coloured components	ink
Distillation	liquids / solvent from solution	pure water from salt water
Magnet	magnetic from non-magnetic	iron filings + sand

Key takeaways

- Particle size decides how a mixture behaves.
- Colloids scatter light (Tyndall effect); solutions do not.
- Choose the separation method from the mixture's properties.

Practice questions

1. (MCQ) Milk is a (a) solution (b) colloid (c) suspension (d) compound
2. (Very short) What is the Tyndall effect?
3. (Short) Why does mud settle but milk does not?
4. (Application) Name a method for: sand + water, salt + water, iron + sand, inks.

Answer key

1. (b).

2. Scattering of a light beam by colloid particles, making the beam visible.
3. Mud particles are large (suspension) and sink under gravity; milk's particles are mid-size (colloid) and stay dispersed.
4. Filtration; evaporation; magnet; chromatography.

▶ Watch the video explanation · Instagram