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Mixtures

A mixture is different substances mixed together, but no chemical reactions have happened between them. They may be swirled up and jumbled together, but all the individual parts are still on their own. They can be separated again fairly easily. Mixtures of big things, such as rocks and sand, are easy to spot, but other mixtures, such as the air around us, are harder to see, and harder to split apart.

1. What is a mixture?

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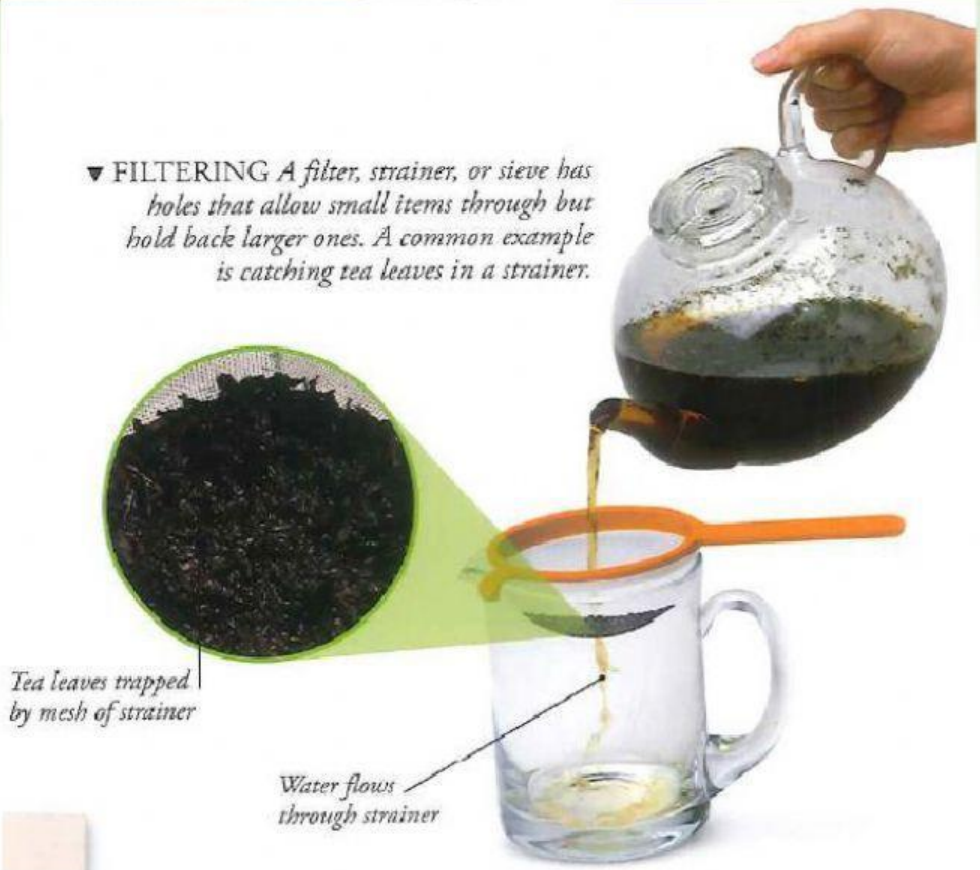
2. How are mixtures separated?

SEPARATION

A mixture can usually be divided into its separate parts physically, for example by shaking, filtering, or floating. This is because the parts have not joined or combined chemically to produce new substances, as they do in molecules and compounds. When a mixture's parts are sorted out and separated from each other, they are the same as before they were mixed together.

▼ FILTERING *A filter, strainer, or sieve has holes that allow small items through but hold back larger ones. A common example is catching tea leaves in a strainer.*



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▲ COARSE MIXTURE *The different parts are easy to see in a seed mix. Sand and gravel are also coarse mixtures.*

▲ SUSPENSION *In muddy water, tiny particles of soil float around (are suspended) in the liquid.*

▲ ALLOY *The alloy brass, used to make instruments, is a mixture of copper and zinc. It combines features of both metals.*

▲ SOLUTION *Substances such as sugar dissolve in water. If the water dries out, the sugar is left behind.*

3. Give examples of each above.

DILUTE AND CONCENTRATED

When a solute dissolves, it breaks up into tiny pieces – usually its smallest possible form, called molecules. These mix and float about among the molecules of the solvent. Just a little solute makes a dilute solution, while a lot makes it concentrated. The solute and the solvent do not join or combine. They form a mixture and can be separated again.

4. What does it mean to "dilute"?

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