Mixtures & Solutions

Everything around us is made up of different substances. Sometimes these substances are combined together, but not chemically joined are called **mixtures**. A mixture is a combination of two or more substances where each substance keeps its own properties. For example, a fruit salad is a mixture of different fruits that can still be separated easily.

There are two main types of mixtures: homogeneous and heterogeneous.

A **homogeneous** mixture has the same appearance and composition throughout. You cannot see the different parts. For example, salt water is a homogeneous mixture because the salt dissolves completely in the water, making it look uniform.

A **heterogeneous** mixture, on the other hand, has visibly different parts. For example, a bowl of cereal with milk or a sand and water mixture are heterogeneous because you can see and separate the components.

A special kind of homogeneous mixture is called a solution. A **solution** is formed when one substance dissolves in another. The substance that dissolves is called the **solute**, and the substance that does the dissolving is called the **solvent**. For example, in salt water, salt is the solute and water is the solvent. In lemonade, sugar and lemon juice are solutes dissolved in water, which acts as the solvent.

Mixtures and solutions play an important role in our daily lives. When we stir sugar into our tea, make juice from cordial, mix soil for gardening, or inhale clean air, we are dealing with mixtures and solutions. Air itself is a mixture of gases such as nitrogen, oxygen, and carbon dioxide. Understanding mixtures helps us in cooking, cleaning, and even in scientific industries like medicine and chemical production.

Mixtures and Solutions

Upper Primary Advance Science

1. What is a mixture?

   a) A chemical compound
   b) A combination of substances not chemically joined
   c) A pure substance
   d) A single element

2. Which of the following is a homogeneous mixture?

   a) Salad
   b) Sand and water
   c) Salt water
   d) Cereal with milk

3. In a solution, the solute dissolves the solvent. (True/False)

4. A heterogeneous mixture looks the same throughout. (True/False)

5. Air is an example of a mixture. (True/False)

Fill in the blanks.

6. A mixture is made up of two or more _____ that are not chemically joined.

7. The substance that dissolves in a solution is called the _____.

8. The substance that does the dissolving is called the _____.

9. Salt water is made of salt (solute) and _____ (solvent).

10. A bowl of cereal and milk is a _____ mixture.

11. Explain how a homogeneous mixture differs from a heterogeneous mixture in your own words.

_____

_____

12. Give two examples of mixtures or solutions you use in your daily life.

_____

_____

_____

Circle whether it is homogeneous or a heterogeneous mixture.

milk

Homogeneous Heterogeneous

cookies

Homogeneous Heterogeneous

Mixtures and Solutions - Answers

Upper Primary Advance Science

1. What is a mixture?

   a) A chemical compound
   b) A combination of substances not chemically joined
   c) A pure substance
   d) A single element

2. Which of the following is a homogeneous mixture?

   a) Salad
   b) Sand and water
   c) Salt water
   d) Cereal with milk

3. In a solution, the solute dissolves the solvent. (True/False)

4. A heterogeneous mixture looks the same throughout. (True/False)

5. Air is an example of a mixture. (True/False)

Fill in the blanks.

6. A mixture is made up of two or more substances that are not chemically joined.

7. The substance that dissolves in a solution is called the solute.

8. The substance that does the dissolving is called the solvent.

9. Salt water is made of salt (solute) and water (solvent).

Mixtures and Solutions - Answers

Upper Primary Advance Science

10. A bowl of cereal and milk is a heterogeneous mixture.

11. Explain how a homogeneous mixture differs from a heterogeneous mixture in your own words.

Homogeneous mixtures look the same throughout;

heterogeneous mixtures have visibly different parts.

12. Give two examples of mixtures or solutions you use in your daily life.

Tea with sugar (solution), fruit salad (mixture),

air (mixture), or juice (solution).

Circle whether it is homogeneous or a heterogeneous mixture.

milk

Homogeneous Heterogeneous

Heterogeneous (fat globules separate if left standing)

cookies

Homogeneous Heterogeneous

Heterogeneous (chips + dough visible)