

**Intermediate Science 7**  
**Unit 3: Temperature and Heat**  
**Topic 2: What Kind Of Mixture**



Student Name \_\_\_\_\_

**Mixture:** is a combination of two or more substances where there is no chemical combination or reaction. Mixtures combine physically in no specific proportions. They just mix

There are two types of mixtures:

**1) Homogeneous mixtures :**

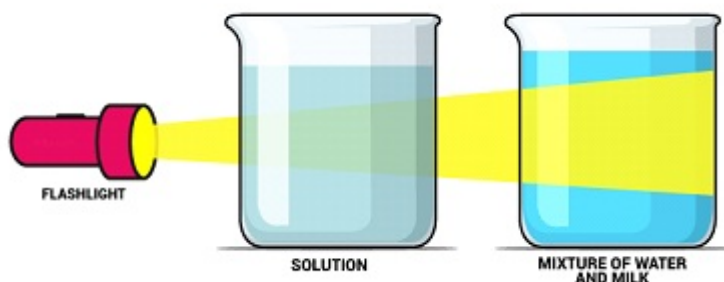
- Is a mixture in which the components are evenly distributed among each other. You can't see the component parts.
- Homo means the same throughout.
- It has a constant composition throughout.
- Homogenous mixtures are also called SOLUTIONS
- Examples:
  - Salt dissolved in water
  - sugar dissolved in water
  - apple juice
  - tea,
  - copper (II) sulfate solution in water
  - alloys

**2) Heterogeneous mixture :**

- the components are not evenly distributed among each other.
- An heterogeneous mixture has two or more distinct phases that are usually detectable.
- This type of mixture does NOT have uniform properties.
- Also called MECHANICAL MIXTURES

**Tyndall effect:**

Sometimes you cannot tell whether something is homogeneous or heterogeneous just by looking at it.



Tyndall effect is an easy way of determining whether a mixture homogenous or heterogeneous . When light is shined through a homogenous solution, the light passes cleanly through the solution, however when light is passed through a heterogenous, the substance in the dispersed phases scatters the light in all directions, making it readily seen.

## PART A: MULTIPLE CHOICE

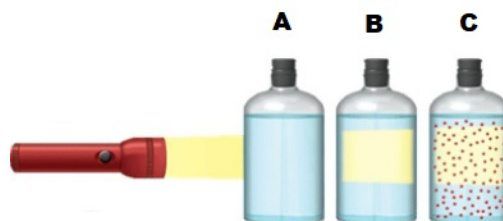
*Instructions: Shade the letter of the correct answer on the computer scorable answer sheet provided.*

1. Which of the following is true for a mixture?
  - I) Combine physically in no specific proportions.
  - II) Can be classified as homogenous or heterogeneous
  - III) Light can be used to identify
  - IV) Can only be an element or a compound
  - (A) I and II
  - (B) I, II and III
  - (C) I, II and IV
  - (D) I, II, III and IV
  
2. Mixtures can be classified into 2 types, homogeneous and heterogenous. Why are they different?
  - (A) Heterogenous has 2 substances. Homogenous has 3 or more substances.
  - (B) Homogeneous looks the same throughout, with heterogenous you can see the different parts.
  - (C) Heterogeneous looks the same throughout, with homogeneous you can see the different parts
  - (D) They are the same, just different names
  
3. What is another name for a homogeneous mixture?
  - (A) Element
  - (B) Compound
  - (C) Mechanical mixture
  - (D) Solution
  
4. Which of the following are homogeneous mixtures?
  - (A) Oatmeal
  - (B) Rocky road ice cream
  - (C) Shampoo
  - (D) Water
  
5. What happens when you try to make a mixture of sugar and water?
  - (A) It becomes a homogeneous mixture, the sugar dissolves into the water
  - (B) It becomes a homogeneous mixture, the sugar does not dissolve into the water
  - (C) It becomes a heterogeneous mixture, the sugar dissolves into the water
  - (D) It becomes a heterogeneous mixture, the sugar does not dissolve into the water
  
6. What is another name for a heterogenous mixture?
  - (A) Element
  - (B) Compound
  - (C) Mechanical mixture
  - (D) Solution

7. Which of the following are mechanical mixtures?
- (A) Chocolate bar with almonds  
 (B) Chocolate milk  
 (C) Flat pop  
 (D) Orange juice with pulp
8. What happens when you try to make a mixture of oil and water?
- (A) It becomes a homogeneous mixture, the oil dissolves into the water  
 (B) It becomes a homogeneous mixture, the oil does not dissolve into the water  
 (C) It becomes a heterogeneous mixture, the oil dissolves into the water  
 (D) It becomes a heterogeneous mixture, the oil does not dissolve into the water
9. What can be used to tell the difference between homogeneous mixture and a heterogeneous mixture?
- (A) Flashlight  
 (B) Knife  
 (C) Spoon  
 (D) Thermometer
10. Which of the following refers to the process of using light to distinguish between a homogeneous and heterogeneous mixture?
- (A) Celsius effect  
 (B) Fifeild effect  
 (C) Kelvin effect  
 (D) Tyndall Effect

11. Using the diagram below, which of the following is a heterogeneous mixture?

- (A) A only  
 (B) A and B  
 (C) A, B and C  
 (D) B and C



**PART B : FILL IN THE BLANK**

Classify each of the following heterogeneous mixture or homogeneous mixture ? Place the following on the scantron:

A = Homogeneous Mixture  
 B = Heterogeneous Mixture

12. Plastic \_\_\_\_\_  
 13. Concrete \_\_\_\_\_  
 14. Mayonnaise \_\_\_\_\_  
 15. Seawater \_\_\_\_\_  
 16. Dirt \_\_\_\_\_  
 17. Soda \_\_\_\_\_  
 18. Italian dressing \_\_\_\_\_  
 19. Chicken soup \_\_\_\_\_  
 20. Lemonade \_\_\_\_\_

**PART C : FILL IN THE BLANK**

Read the following information on elements, compounds and mixtures. Fill in the blanks where necessary.

- Two or more \_\_\_\_\_ or \_\_\_\_\_ NOT chemically combined.
- No reaction between substances.
- Mixtures can be uniform (called \_\_\_\_\_) and are known as solutions.
- Mixtures can also be non-uniform (called \_\_\_\_\_).
- Mixtures can be separated into their components by chemical or physical means.
- The properties of a mixture are similar to the properties of its components.

**PART D: WRITTEN RESPONSE**

1. Write a definition for the term heterogeneous mixture. Include two examples in your definition.

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2. Write a definition for the term homogeneous mixture. Include two examples in your definition.

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3. When you first open a bottle of pop, the liquid is filled with tiny bubbles.

(A) Is the pop homogeneous or heterogeneous? Explain your answer.

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(b) If you let the pop sit for a day, what happens? Is the liquid homogeneous or heterogeneous now? Explain your reasoning.

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4. A mechanical mixture is heterogeneous, while a solution is homogeneous. Explain why.

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5. Describe what you will see if you shine a beam of light through a solution.

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