

Introduction:

This activity will allow you to observe three types of mixtures—solutions, suspensions, and colloids. Your teacher has prepared 7 mixtures for you, each containing 250 mL of water and one of the following:

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|-----------------------|------------------------|----------------|
| 1) 12 g sucrose | 2) 3 g soluble starch | 3) 5 g clay |
| 4) 2 mL food coloring | 5) 2 g sodium chloride | 6) 3 g gelatin |
| 7) 50 mL cooking oil | | |

Materials:

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|---------------------|----------------|
| 7 prepared mixtures | test-tube rack |
| 7 test tubes | flashlight |
| labeling tape | stirring rod |

Procedure:

1. Label 7 test tubes in the following way:

1) sucrose	2) starch
3) clay	4) food coloring
5) sodium chloride	6) gelatin
7) oil	
2. Using the 7 provided mixtures, measure approximately 10 mL of each mixture into the appropriately labeled test tube.
3. Observe the 7 mixtures. Record a description of each in the provided table.
4. After stirring, record which mixtures separate upon standing.
5. In a darkened room, shine a flashlight on each mixture that does not separate upon standing. In the data table, describe if the mixture exhibits the Tyndall Effect.
6. Classify each mixture as a solution, suspension, or colloid.

Data:

MIXTURE	BRIEF DESCRIPTION	SEPARATES UPON STANDING (YES OR NO)	EXHIBITS TYNDALL EFFECT (YES OR NO)	CLASSIFICATION (SOLUTION, SUSPENSION, COLLOID)
Sucrose				
Starch				
Clay				
Food coloring				
Sodium chloride				
Gelatin				
oil				

Conclusions:

1. Define the Tyndall Effect:
2. a) If the mixture separates upon standing, the mixture is a _____.
b) If the mixture does NOT separate upon standing and the Tyndall Effect is NOT seen, the mixture is a _____.
c) If the mixture does NOT separate upon standing and exhibits the Tyndall Effect, the mixture is a _____.
3. Solutions do not exhibit the Tyndall Effect. Why?
4. Describe the term "emulsion":