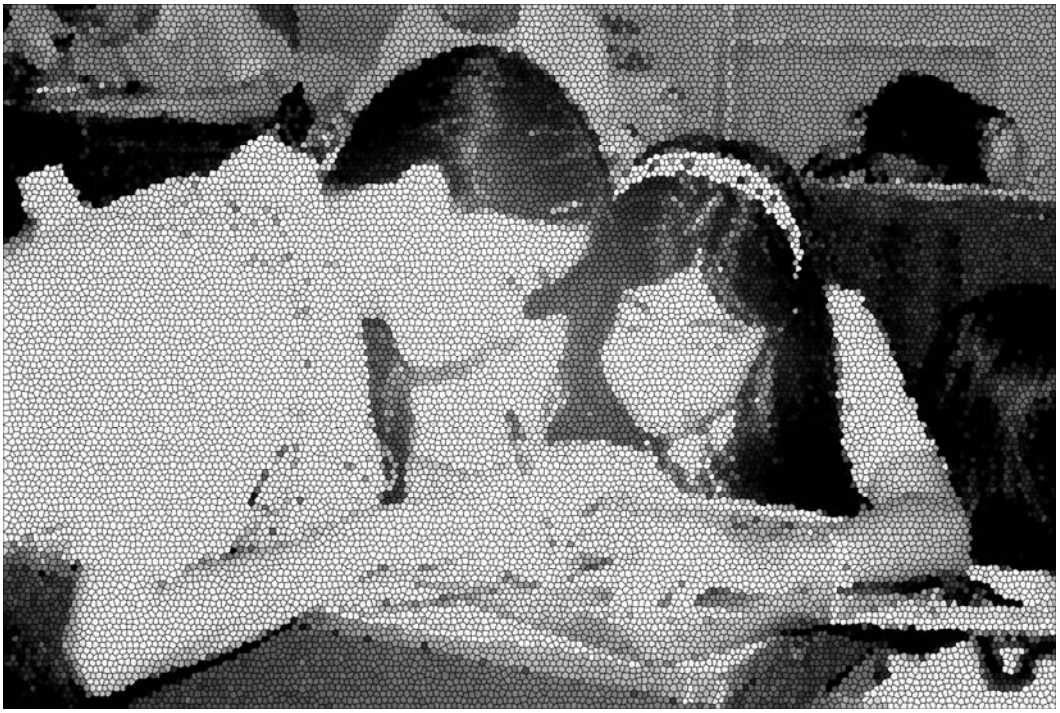
S C I E N C E 4

Modified In-School Off-School Approach Modules (MISOSA)

Distance Education for Elementary Schools

SELF-INSTRUCTIONAL MATERIALS



MIXING SOLIDS WITH LIQUIDS

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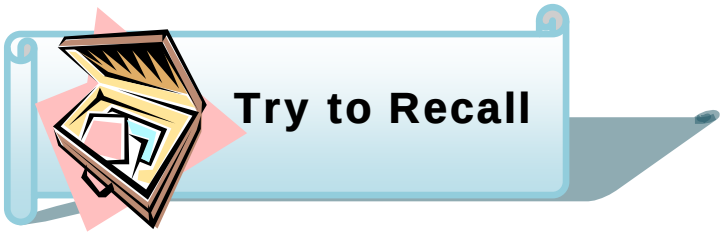
MIXING SOLIDS WITH LIQUIDS

At the end of this lesson, you will be able to:

- Describe what happens when liquids are mixed with solids

A. Have you tired mixing water and sugar? What happened to the sugar? What do you call this process? Do all solids behave in the same way? Find out in this modules



A. Study each set of liquid. Describe what happens when they are mixed.

1. alcohol ✣ water

2. soy sause ✣ vinegar

3. oil ✣ water

B. If A = 1, B = 2, C = 3 and so on, decode the numbers below to come up with a word. Then identify whether this a solid or a liquid. Write it in your notebook.

19 1 12 20 - _____

6 12 15 21 18 - _____

23 1 20 5 18 - _____

1 12 3 15 8 15 12 - _____

22 9 14 5 7 1 18 - _____

1 3 5 20 15 14 5 - _____

Exploration Time

- ACTIVITY 1

  - Get samples of sugar, coffee, powdered milk, creamer, chocolate powder, powdered juice and detergent soap, glasses and water.
  - Half fill 9 glasses with water.
  - Pour a spoon full of each sample into the glasses.
  - Mix them well.
  - Describe what happened to the solids.

- ACTIVITY 2

  - You will need a glass, water and a spoonful of flour
  - Half –fill the glass with water.
  - Add a spoonful of flour into the glasses and stir.
  - Observe.
  - Describe what happened.

- ACTIVITY

  - You will need a glass, water and sand
  - Half-fill the glass with water.
  - Add a spoonful of sand into the glass and stir

Read and learn more:

When sugar is mixed with water, the sugar seems to disappear into the water. This disappearing is called dissolving. But the sugar has not disappeared, the sugar molecules actually settles into the water molecules that it can no longer be seen, the same happens with salt. You know that sugar and salt is still there because you can taste it, even though you can you not see it. The salt and sugar particles dissolve completely into the water. This clear mixture is called solution.

Other solids like detergent soap, powdered juice, powdered milk, chocolate powder and other also dissolve in water but we know it has mixed with the water because of the resulting color of the mixture. Solids that dissolve in water are called soluble materials. Solids that do not dissolve in water are called insoluble materials. For example, sand is insoluble in water. The particles of sand do not mix with the water. The particles of sand do not mix with the water. Instead the sand settles at the bottom of the water forming a sediment. Some insoluble solids such as flour seem to make the water appear cloudy. When the insoluble solid is spread throughout the liquid, making it cloudy, it is called a suspension

I learned that:

- Solids that dissolve in a liquid are soluble to that liquid.
- Solution is a kind of mixture where the solids are completely dissolved throughout the water.
- Solids that do not dissolve in liquid are insoluble to that liquid.
- Suspension is a kind of mixture where the solids is spread throughout the liquid, making it cloudy.
- Some solids do not dissolve in a solvent and settles at the bottom of the water.

Apply It

Answer the following questions.

- You learned that detergent bars dissolve in water, what would you do so that it would last longer?
- You wanted to form a solution that is clear. What materials would you use? Explain why.
- Why do you think medicine suspension are needed to be shaken before they are taken orally?

Test Yourself

Match the phrases on column A with the correct word on column B.

A	B
1. Solids that dissolve in a liquid are to that liquid	a. Sediment
2. Insoluble particulars that settle at the bottom of a solvent	b. Suspension
3. A solution wherein no more solute can dissolve	c. Solution

4. Insoluble particles dispersed in a liquid — d. Soluble

5. Formed when a solid dissolves completely in liquid — e. Soluble

➤ **Given the following solutes:**

chocolate powder	detergent powder	salt
papper	Soil	flour
face powder	Polboron	powdered chalk

➤ **Write them under the correct column in the table below. Keeping in mind their reaction when mixed with hot water.**

SPREAD EVENT IN THE SOLVENT	MAKE THE SOLVENT CLOUDY	SETTLE AT THE BOTTOM OF THE SOLVENT

Congratulations for trying your best in accomplishing this module, try to share the things you have learned with your classmate and friends.