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DepED
DEPARTMENT OF EDUCATION

Science

Quarter 1 – Module 1
Lesson 2: Differentiating a Solute from a Solvent

ALTERNATIVE DELIVERY MODE
ADM

What I Need to Know

This module was designed and written with you in mind. It is here to help you master the matter. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

The module is about:

- Differentiating a solute from solvent

After going through this module, you are expected to be able to:

- Differentiate a solute from solvent

What I Know

Directions: Choose the letter of the correct answer. Use a separate sheet for your answer.

1. Which of the following materials can be dissolved?
   a. Stone c. salt
   b. leaf d. cloth

2. If you are going to mix hot water and coffee powder what will happen?
   a. The coffee powder will not dissolve in water.
   b. The coffee powder will dissolve in water thoroughly.
   c. The coffee powder will dissolve in water partially.
   d. None of the above

3. This is formed when one substance is dissolved in another substance.
   a. solute
   b. solution
   c. sols
   d. aerosol

4. Which of the following materials is a solvent?
   a. flour
   b. water
   c. sugar
   d. both a and b

5. It dissolves more substances than any other?
   a. sugar
   b. salt
   c. water
   d. pebble

Directions: Write True if the statement is correct and False if it is not.

6. All solutes dissolve in solvents.
7. Sugar is an example of a soluble substance.
8. A pinch of salt can easily be dissolved in water than in oil.
9. An enamel paint dissolves in water.
10. Chocolate powder will dissolve in hot water easily.

Lesson 2 Differentiating a Solute from a Solvent

What drinks do you usually prepare during breakfast? It could be coffee, milk or chocolate powder mixed with a hot water. Have you not wondered which of those substances does the dissolving or the substance that is being dissolved?

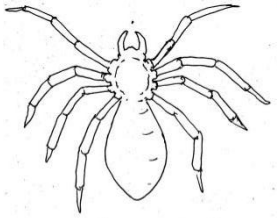
What's In

Choose the letter of the correct answer. Write your answer on your answer sheet.

1. Which of the following illustrations is an example of a mixtures?

a. 

b. 

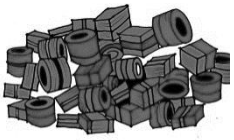
c. 

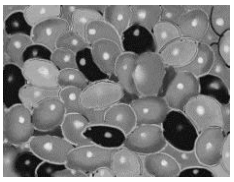
d. 

2. Mixtures can be solid, liquid or gas. It can be homogeneous or heterogeneous and are made up of two or more components. Which of the following mixtures where components are not visible?

a. 

b. 

c. 

d. 

3. Which of these best describes a heterogeneous mixture?
   a. The components are not visible.
   b. They show only one phase.
   c. They have components that are not uniform.
   d. They have the same properties.

4. Which of the statements/phrase best describes a solution?
   a. Solution is formed when one substance dissolves in another substance.
   b. Solutions are heterogeneous mixtures.
   c. Pizza, halo-halo and fruit salad are examples of a solution.
   d. Both B and C

5. What are the 2 types of mixtures? _____ and _____.

What's New

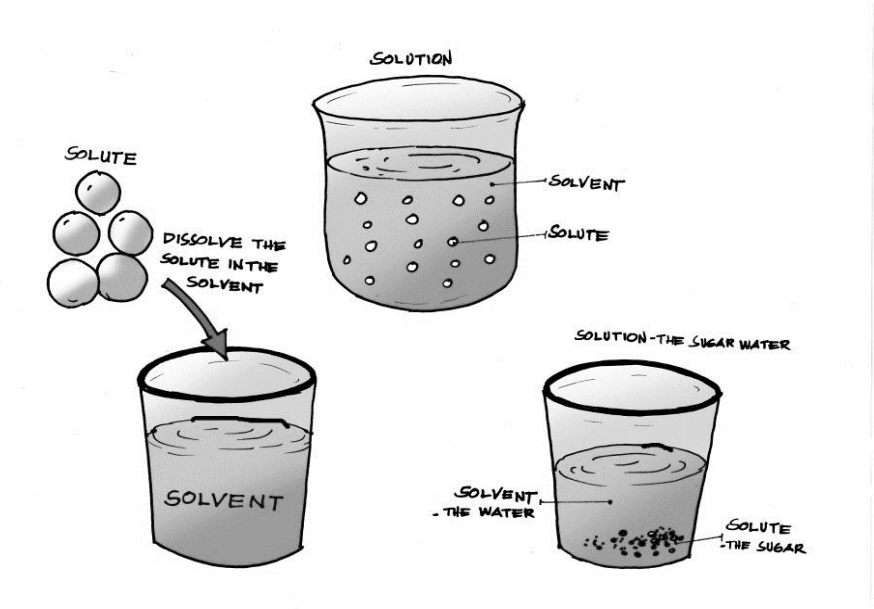
Activity 1

Answer the following questions in few complete statements. Write your answer in your Science Journal.

• If you mix water and coffee, what will happen? Which substance will be dissolved?

• What substance dissolves it? Which is solvent? Which is solute?

What is It



When one substance dissolves into another, a solution is formed. A solution is a homogenous mixture consisting of a solute dissolved into a solvent.

A solvent is a substance that does the dissolving or it is a substance used to dissolve a solute. It is of a larger amount. A solute dissolves or the substance that is being dissolved, it is of smallest amount. Water is called the universal solvent because it dissolves more substances than any other. There are solutes that can be dissolved in solvent, it is called soluble. However, there also substances that cannot be dissolved in solvent, it is called insoluble.

What's More

Activity 1.1

Direction: Classify each substance as solute or solvent. Do it in your Science journal or notebook.

1. buko juice
2. water
3. sugar
4. coffee powder
5. salt

Put a ✓whether the given solute is soluble and X if not soluble in the solvent paired with them.

6. enamel paint-water
7. flour-oil
8. salt-vinegar
9. sugar-water
10. powdered milk-hot water

What I Have Learned

Directions: Complete the statements below by choosing the correct answers from the given choices in the box. Write the complete paragraph in your Science journal.

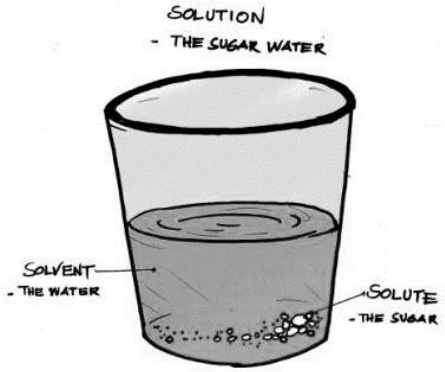
solvent	solute	soluble	insoluble	greater	smaller

I learned that…..

A _____ is a substance used to dissolve a _____. It is of the _____ amount. While a _____ is a substance that is being dissolved. It is of the _____amount. There are substances that can be dissolved in the given solvent, it is called _____. While the materials that can't be dissolved is called _____.

What I Can Do

Directions: Answer the following questions below. Write your answer in your Science journal



Assessment

1. Based from the given illustration, which is the solute? Which is the solvent?

   _____

2. How is the solute being dissolved in the given solvent?

   _____

Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. Which happens if you mix juice powder with water?
   a. The juice powder will dissolve in water.
   b. The juice powder will form a layer.
   c. The juice powder will not dissolve in water.
   d. The juice powder will settle at the bottom of the water.

2. What substance dissolves most substance?
   a. water
   b. oil
   c. paint
   d. sugar

3. What will happen if we add leaves to water?
   a. The leaves will dissolve in water.
   b. The leaves will not dissolve in water.
   c. The leaves will partially dissolve in water.
   d. Both A and B

4. What is the solvent in a cup of milk?
   a. sugar
   b. milk powder
   c. water
   d. sugar and milk

5. Which of the following substances can be dissolved in water?
   a. oil
   b. enamel paint
   c. salt
   d. both a and b

6. Which of the following substances is an example of a solute?
    a. pepper
    b. water
    c. vinegar
    d. soy sauce

7. Which of the following substances does not dissolve in water?
    a. sugar
    b. pepper
    c. oil
    d. milk powder

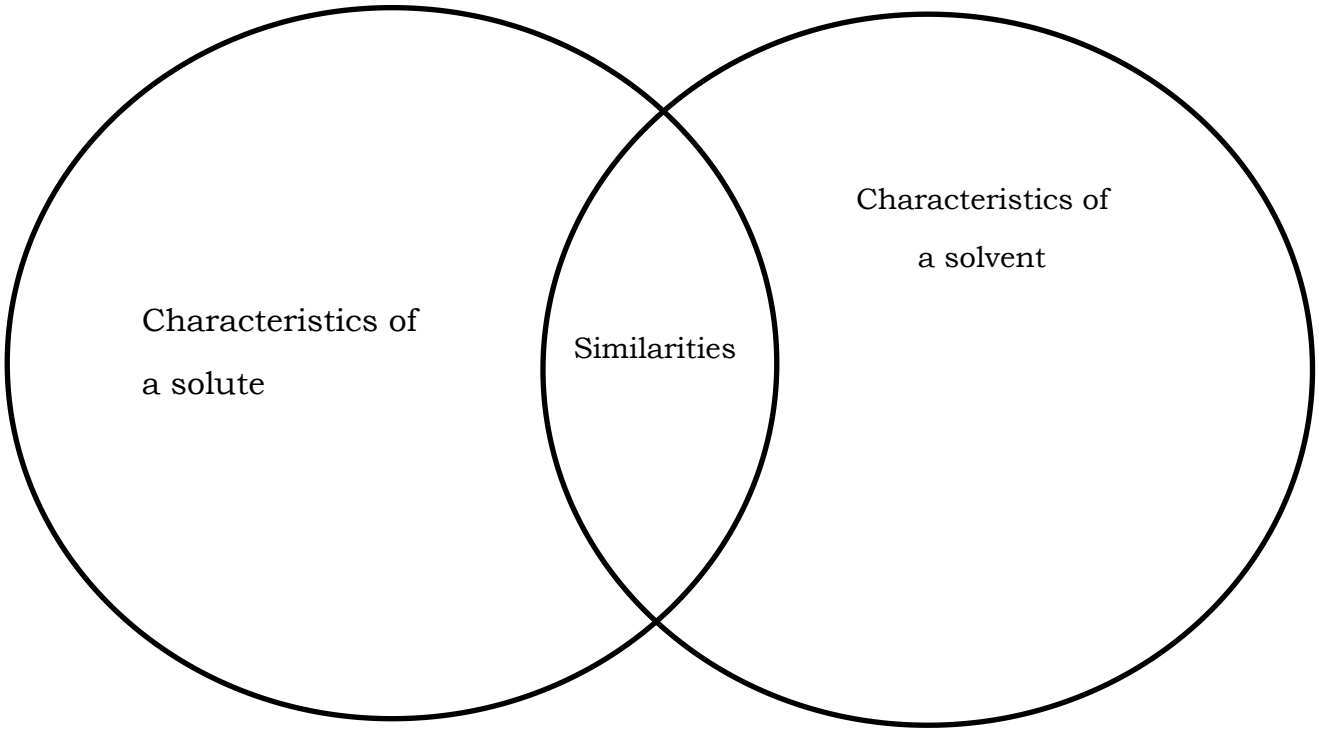
8. What do you call the substance that can be dissolved in the given solvent?
    a. soluble
    b. insoluble
    c. sol
    d. emulsion

9. If you mix hot water and milk powder, what will happen?
    a. The milk powder will dissolve in water
    b. The milk powder will form a layer.
    c. The milk powder will not dissolve in hot water.
    d. None of the above

10. In a solution, what do you call the substance in a larger amount?
    a. solute
    b. solvent
    c. sols
    d. none of the above

Additional Activities

Directions: Complete the Venn diagram by identifying the difference between a solute and a solvent.



Answer Key

What I Know	What's More	Assessment
1. C 2. B 3. B 4. B 5. C 6. false 7. true 8. true 9. false 10.true	Activity 1.1 1. solvent 2. solvent 3. solute 4. solute 5. solute 6. X 7. X 8. / 9. / 10. /	1. A 2. A 3. B 4. D 5. A 6. C 7. C 8. A 9. A 10.B
What's In 1. A 2. B 3. C 4. A 5. homogeneous and heterogeneous mixture	What I can do solute-sugar solvent-water the sugar will dissolve in water thoroughly	