

Modified In-School Off-School Approach Modules (MISOSA)
Distance Education for Elementary Schools
SELF-INSTRUCTIONAL MATERIALS



SEPARATING MIXTURES



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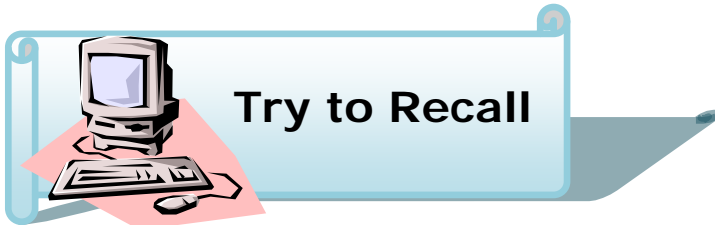
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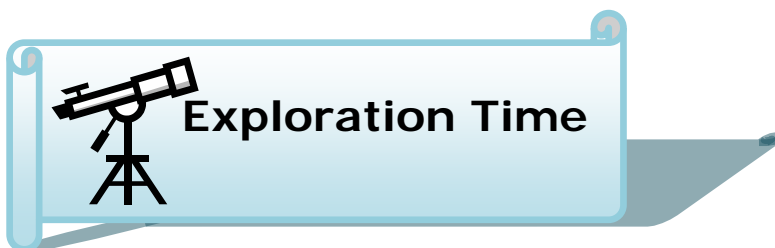
SEPARATING MIXTURES

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

- demonstrate how certain mixtures can be separated
 - picking
 - decanting
 - evaporating
 - sieving
 - filtering



- A. Observe your mother mixing dough. What does she mix? Write your observation in your notebook.
- B. Combine a spoonful each of uncooked corn, palay and mungo seeds. Put these substances together in a dish and mix them with your fingers.



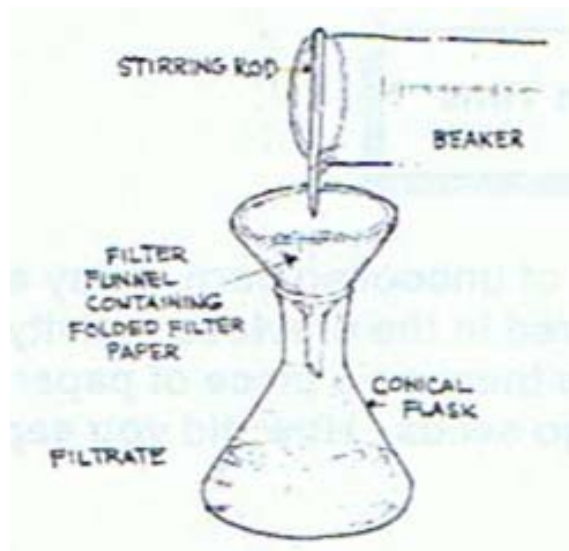
- A. Get the mixture of uncooked corn, palay and mungo seeds you have prepared in the previous activity. Pick up the corn seeds and place them on a piece of paper. Do the same with palay and mungo seeds. How did you separate them?
- B. Get a glass of water and a scoop of sand. Mix the water and the sand. Pass the mixture through a cheesecloth. Observe what happens. How does the water separate from the sand?
- C. Get some iron filings. Mix them with flour. Hold a magnet over the mixture. Observe what happens. How do the iron filings separate from the flour?
- D. Get a candle, evaporating dish or foil formed into a box, tongs, softdrinks. Pour 10 ml of softdrink into the evaporating dish or foil. Gently heat it until most of the water has evaporated. Be careful not to burn it.) Allow the dish to cool. Examine the substance remaining in the dish. Describe the product left in the foil/dish. Where did the water go?



Read and learn more:

A mixture of grains can be separated by **picking up** each grain and placing them in different containers.

In a mixture of grains, sand, and water, the grains of sand cannot pass through the cheesecloth. Water separates from the sand when it passes through the cheesecloth. This method of separating mixtures is called **filtration**. In **filtration**, solutions or gases pass through the filter but particles which cannot fit through the filter are trapped by it. An example for this is to filter a mixture of pepper and water. In the laboratory, filtration is carried out using filter paper but we also use filtration at home like when we use tea strainers, face mask and food strainer.



A magnet can attract iron. Iron filings separate from the mixture by clinging to the magnet.

A simple method of separating a mixture of liquid and sediment is **decantation**. The sediment is allowed to settle to the bottom of the container and then the liquid is carefully poured off the top. An example for this is the mixture of lime and water.

Your fingers get sticky when you spill sugar on them. This is caused by the sugar dissolved in it. You can separate this sugar from the water in the softdrink by evaporation. When you heat the softdrink the water evaporates leaving the sugar and other substances behind as crystals.



I learned that:

➤ mixtures can be separated by:



- ◆ picking up each solid;
- ◆ sifting the mixture through the use of a cheesecloth;
- ◆ magnetism or using a magnet to separate iron filings or magnetic materials;
- ◆ decantation wherein the sediment is allowed to settle at the bottom of the container and then the liquid is carefully poured off; and
- ◆ filtration wherein solutions or gases pass through a filter.



Apply It

1. Mix nails and stones. How could you quickly separate the nails from the stones?
2. Mix cold water and flour in a jar. Stir very well. After a few minutes, you can see sediments at the bottom of the jar. How could you separate the sediments from the water?
3. After the members of the family ate different kinds of fruits, you gathered the seeds. You mixed them in a basin. Later on, your mother instructed you to separate each kind of seed. How will you separate each kind of seed?
4. Mix sand and water in a basin. After five minutes, try to separate the sand from the water. How will you do this?
5. Dissolve one teaspoon of sugar in a cup of water. (mixture of solid and liquid.) After three minutes, separate the sugar from the water. How will you do it?





Test Yourself

A. Identify the method of separating the following mixtures.

1. scrap iron and plastic
2. avocado, mango and chico seeds
3. lime and water
4. sand and gravel
5. pebbles and water
6. salt and water

B. Name at least three ways of separating mixtures and differentiate each from the other.

C. Answer each problem correctly

1. You accidentally mixed salt with coffee. Can you separate salt from coffee? Why or why not?
2. Your sister happened to mix iodized salt with white sugar. Can she still separate the two? Why or why not?

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

