



# EDUKALA



 **dheerya**  
foundation



# Science

# 6th Grade



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# WAYS OF CLEANING FOOD

- In our daily life, there are many times when we notice a substance being separated from food
- Suppose you are given a plate of poha to eat and you find chillies in them
- You may carefully take them out before eating
- Suppose you are given a basket containing mangoes and guavas and asked to separate them
- What would you do? Pick out one kind and place them in a separate container, right?
- Today, let us learn about different ways in which we can clean our food by separating it from unwanted materials



# OBJECTIVES

- Students understand different ways of cleaning food



# PRE-REQUISITES

- 1 cup of water + tea leaves
- 1 empty cup
- 1 strainer
- Rice + red chana
- Peanuts (with husk)
- Flour + pebbles
- Bowl of rice + dust
- 1 bottle of water
- 1 empty bowl
- Printout of worksheet (level 2)





# PRE-ASSESSMENT



- Suggest some ways of separating substances that you have observed in your surroundings.
- Eg: Pebbles and stones being removed from sand by sieving at a construction site



# LEVEL-1 & 2

## ACTIVITY:

- Students are divided into 5 groups
- Each group needs to perform an experiment and record their observation
- Their task is to separate unwanted substances from their food
- They share their learning and experience with the whole class
- Teacher can help them with scientific names of separation method



# LEVEL-1 & 2

## GROUP 1:

- This group is given a cup of water with tea leaves (chai patti) and an empty cup
- They are also given a strainer
- Each member of the group needs to try separating tea leaf from water using the strainer
- They record their observations. Encourage them to also illustrate.



# LEVEL-1 & 2

## GROUP 1:

What I did	What happened	Separation method
Poured tea into an empty cup through a strainer	Tea leaves stayed back in the strainer and clear but coloured water filled the empty cup	Straining/Filtration 



# LEVEL-1 & 2

## GROUP 2:

- This group is given a plate of rice with red chana
- Each member of the group needs to try separating chana from rice
- They record their observations. Encourage them to also illustrate.



# LEVEL-1 & 2

## GROUP 2:

What I did	What happened	Separation method
Handpicked chana from the mixture and kept it in a different dish	The chana and rice got separated	Handpicking 



# LEVEL-1 & 2

## GROUP 3:

- This group is given a plate of peanuts with its outer husk
- Each member of the group needs to try separating the husk from the peanuts
- They record their observations. Encourage them to also illustrate



# LEVEL-1 & 2

## GROUP 3:

What I did	What happened	Separation method
Rubbed the peanuts to remove the husk. Blew on the peanut so that the lighter husk blows away	The lighter husk got separated from peanuts and the air from mouth blew it away leaving behind clean peanuts	Winnowing 



# LEVEL-1 & 2

## GROUP 4:

- This group is given a plate of flour with tiny pebbles
- They are also given a sieve
- Each member of the group needs to try separating pebbles from flour
- They record their observations. Encourage them to also illustrate



# LEVEL-1 & 2

## GROUP 4:

What I did	What happened	Separation method
Passed the flour and pebble mixture through the sieve	The clean flour passed through the sieve and the pebbles stayed behind	Sieving 



# LEVEL-1 & 2

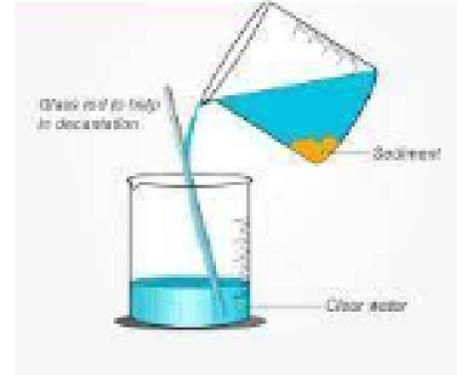
## GROUP 5:

- This group is given a bowl of rice with dust and a bottle of water
- They are also given an empty bowl to remove water
- Each member of the group needs to try separating dust from rice
- They record their observations. Encourage them to also illustrate



# LEVEL-1 & 2

## GROUP 5:

What I did	What happened	Separation method
Add water to the bowl of rice and rub it to wash thoroughly. Removed the dirty water	The rice settled to the bottom of the bowl and dust floated. When dirty water was removed, clean rice was left behind in the bowl	Sedimentation and Decantation  A diagram illustrating the process of decantation. It shows a beaker containing a mixture of blue liquid and yellow sediment. A glass rod is used to guide the pouring of the liquid into a smaller beaker. Labels include 'Glass rod to help in decantation', 'Sediment', and 'Clear water'.



## EXPLAIN:

- When the heavier component in a mixture settles after water is added to it, the process is called sedimentation. When the water (along with the dust) is removed, the process is called decantation.
- The same principle is used for separating a mixture of two liquids that do not mix with each other. For example, oil and water from their mixture can be separated by this process. If a mixture of such liquids is allowed to stand for some time, they form two separate layers. The component that forms the top layer can then be separated by decantation.



## EXPLAIN:

If we add two spoons of salt to water in a beaker and stir it well, the salt will dissolve in water. Now we heat the beaker containing the salt water and let the water boil away. What is left in the beaker?

In this activity, we used the process of evaporation, to separate a mixture of water and salt.

The process of conversion of water into its vapour is called evaporation.



- Students are challenged with the following worksheet.

## Separating mixtures



### Background knowledge

Filtering removes *insoluble* particles from water (particles that do not dissolve). Salt is *soluble* in water, but sand is insoluble (it is not soluble). The water in a salt solution will evaporate if it is left uncovered. Rock salt is a mixture of salt and sand.

### Science activity

Using the information above and the equipment shown below, explain how you would separate the salt in rock salt from its insoluble parts. You may add other equipment that is not shown here. You may want to draw a flow chart to show the steps in your procedure.

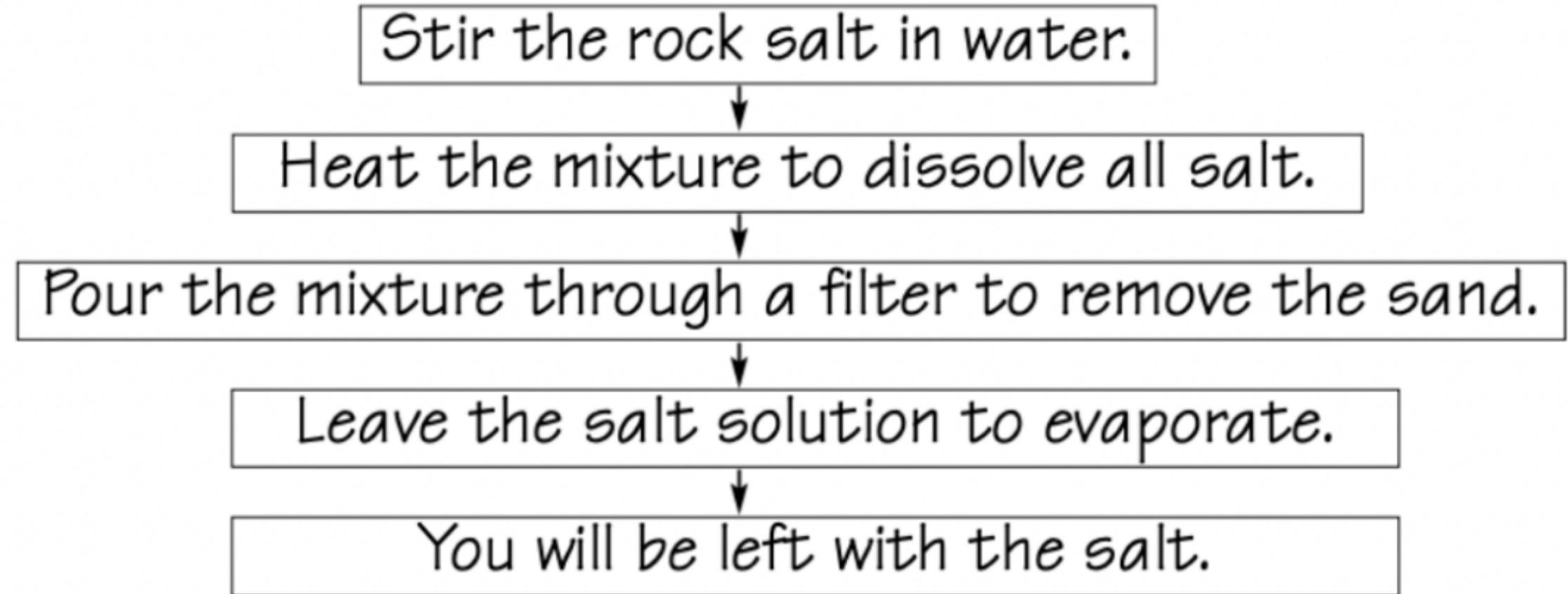


Draw your flow chart here.



# WORKSHEET - ANSWER

Draw your flow chart here.



# POST-ASSESSMENT

**Students answer the following questions:**

1. Ram collected some muddy water from a pond or a river. He let it stand for half an hour. Observe the water carefully and note your observations.

*(The dirt settles down and cleaner water stay up)*

2. Does some soil settle at the bottom of water? Why? What will you call this process?

*(Yes, soil settles down, because it is heavier. This process is called sedimentation)*

3. Now, Ram slightly tilts the glass without disturbing the water. He lets the water from the top flow into another glass. What will you call this process?

*(Decantation)*



# POST-ASSESSMENT

**Students answer the following questions:**

4. Is the water in the second glass still muddy or brown in colour?  
*(Yes)*

5. Now Ram filters that water. Do you think the tea strainer worked?  
*(Not really, sand particles are very small)*

6. Can you suggest to Ram a method of cleaning this water?  
*(Let us try filtering the water through a piece of cloth. In a piece of cloth, small holes or pores remain in between the woven threads. These pores in a cloth can be used as a filter)*



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