

SCIENCE

ACTIVITY -5(A)

ACID, BASES AND SALTS

Class: VII

Duration-30 minutes

Nature of activity: Individual

Learning Outcome: Students will be able to identify that the indicators are substances which show a change in colour when brought in contact with acids and bases. They can be either natural or synthetic.

What we have to do?

To test turmeric as a natural indicator.

What do we require?

Turmeric, water, soap solution, vinegar.

What do I need to know?

Indicators are those substances which help us to identify whether a substance is an acid or a base by their change of colour.

Teacher's Activity: Teacher will arrange the materials for the individual and give instructions regarding the activity.

How will you proceed?

Student's Activity:

1. Take a tablespoon of turmeric powder .Add a little water and make a paste.
2. Make turmeric paper by depositing turmeric paste on a piece of paper and drying it.
Cut thin strips of the yellow paper obtained.
3. Put a drop of vinegar and soap solution on the strip of turmeric paper.

What have you observed?

S.No	Test Solution	Effect on turmeric solution	Remarks
1.	Vinegar		
2.	Soap solution		

What have you learned?

Turmeric do not change its colour in _____ solution and in _____ solution it changes to red and so, it is an acid-base indicator.

What more can we do?

- Make indicator solutions from red cabbage, China rose and check their colour in solutions of some acidic and basic substances.

ACTIVITY-5(B)

Class: VII

Duration-30 minutes

Nature of activity: Individual

Learning Outcome: Students will be able to interpret that the indicators are substances which show a change in colour when brought in contact with acids and bases.

What we have to do?

Identification of the acidic/basic /neutral nature of the salt solutions.

What do we require?

Dilute hydrochloric acid, dilute sodium hydroxide solution, water, litmus paper (red and blue), watch glass, test tubes, dropper, and test-tube stand.

What do I need to know?

An indicator helps us to identify the acidic or basic nature of the substance by changing its colour.

Teacher's Activity: Teacher will arrange the materials for the individual and give instructions regarding the activity.

How will you proceed?

Student's Activity:

1. Take about 1 ml of dilute hydrochloric acid in a watch glass .Take a piece of blue litmus paper and dip it in this solution.
Do you observe any change in the colour of the blue litmus paper? Similarly, dip a piece of red litmus paper in the solution and observe the change.
2. Repeat the above steps with sodium hydroxide solution and sodium chloride solutions respectively. Note the observations.

What have you observed?

Type of Solution	Red litmus paper	Blue litmus paper
Dilute hydrochloric acid		
Sodium hydroxide		
Sodium chloride		

What have you learned?

- Hydrochloric acid solution is _____.
- Sodium hydroxide solution is _____.
- Sodium Chloride solution is _____.

What more can we do?

- Make indicator solutions from Jamun, Red cabbage, China Rose and check their colour in solutions of some acid and basic substances.

Extended learning worksheet

A. Riddles:

1. I am a natural indicator. I turn my pink colour to deep pink in an acid and green in a basic solution. I am _____.
2. I am an organic dye. I am colourless. Bases turn me pink while acids and neutral solutions do not affect me. I am _____.
3. I am a yellow coloured natural indicator. I turn red in a base while acids and neutral substances do not affect me. I am _____.
4. I am a synthetic indicator. I turn red in acidic solution and yellow in basic solution. I am _____.

B. Complete the table:

Parameters	Acids	Bases
Taste		
Touch		
Solubility in water		
Effect on blue litmus paper		
Effect on yellow turmeric paper indicator		
Effect on pink china rose indicator		

