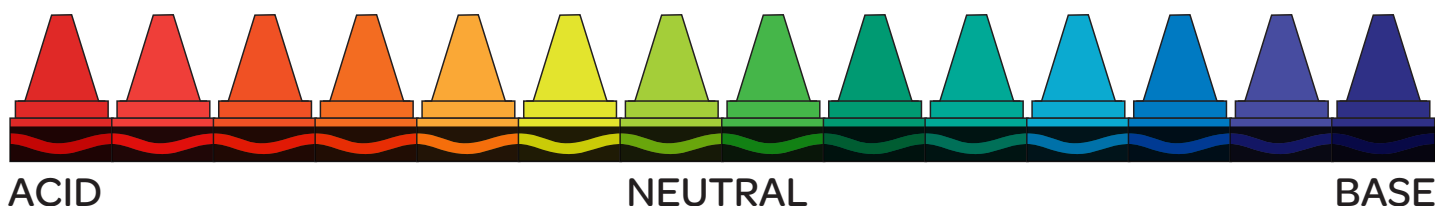


Predicting Color Change

Objective: Students will predict whether various household items and foods are acidic or basic and then test their predictions with handmade litmus paper.

PH SCALE



Key Concept: Red cabbage can be used to make indicator paper to be compared with students' predictions on pH levels, whether an item is an acid or base (alkali).

Supplies Needed:

- Crayola® crayons (many pinks, reds, blues & greens)
- Crayola® scissors
- Drawing paper
- Paper towel or coffee filters
- Red cabbage
- Cooking pot and boiling water (can be done ahead of time)
- Various high and low pH items such as: lemon juice, orange juice, baking soda (mix with water), yogurt, liquid soap, tea and ammonia (have students brainstorm more).

Procedure and Results:

1. Have a class discussion about pH levels and how to determine whether an item is an acid or a base. Indicators change color when an acid or base is introduced. While litmus paper can be purchased, nature provides us with indicators in red cabbage or geranium petals. The indicator in red cabbage will turn shades of red in acids and shades of green in bases.

2. Cook a pot of red cabbage for about 5 minutes. This can be done days ahead of time and cooked before being offered to students. Students should cut paper towels or coffee filters into strips (several inches wide). Fully immerse the paper strips into the cabbage water so they soak up the indicator. Let the strips dry overnight.

3. Brainstorm a variety of items to test whether they are acidic or basic. For each item, have students predict what color the indicator paper will change to and draw their predictions, selecting the exact hue of red, pink or green they think the paper will turn.

4. Conduct the color change prediction experiments by dropping a few drops of liquid on the paper. Have students select the exact hues that resulted from the experiments and compare their predictions with the test results.

FACT:



The indicator in red cabbage will turn shades of red in acids and shades of green in bases.