



Food Science Experiment

Topic Title: Acids and Bases

Length of project: 1 hour

Research. What does society know. Look it up!

Acids and bases are used in a variety of things in your home. They affect how food looks, tastes and length of storage. Anthocyanins are a family of color pigments (red, purple, and blue) that provide foods their color. They can also change color because of the pH level.

Words to search: acids and bases food science anthocyanins edu

Situation. Try something different or document a problem that has now arrived.

Adding different types of acids and bases can cause a food's color to change.

Hypotheses. Guess what may happen.

Baking Soda can cause red foods to turn _____ color.

Citric acid can cause red foods to turn _____ color.

Equipment. What you need.

Gather

- 1 Red Cabbage
- Water
- 1 teaspoon Baking Soda
- ½ teaspoon Citric Acid (Orange Juice)
- 3 Saucepans
- 3 Bowls

Methods. Set up a procedure/protocol to test your hypothesis.

- Gather items
- Label each bowl and saucepan with the treatment used.
 - Acid (orange juice)
 - Base (baking soda)
 - Control (water only)
- Put ¼ cup shredded cabbage in pan with ½ cup water to boil add 1 teaspoon baking soda
- Put ¼ cup shredded cabbage in pan with ½ cup water to boil add ½ teaspoon citric acid
- Put ¼ cup shredded cabbage in pan with ½ cup water to boil add nothing (this is the control group)

- Stir and bring to boil over high heat. Once boiling, cover and reduce heat to medium cook 5 minutes. Remove and pour cabbage into corresponding bowls
- Record results

Experiment. Conduct the experiment.

Conduct the experiment to test how each treatment affects the color of the food.

Change one factor and re-do the experiment

Option 1: Red Onion

Option 2: Green Beans: boil for 10 minutes

Option 3: Use another red food you have

Redo the experiment.

Results/Observations. What happened?

Record what happened to the food. What did each of the treatments do?

Conclusion. Apply what you found out.

How could you use this knowledge?