



# FIZZING CRANBERRIES

## VIDEO URL

<https://youtu.be/Tt8gcruypFA>

## TIME

20-25 Minutes

## MATERIALS NEEDED

- 1 c. Cranberry Juice
- 2 Tablespoons of Baking Soda
- 1 Tall, Clear Glass or Jar

## OBJECTIVES

- Learn the difference between acid and bases.
- Explore the science of cranberries.

## MODIFICATIONS

- Use purple grape juice instead of cranberry juice.
- Include more information on acids and bases depending upon the age of the students.

## LESSON

- Ask students to share what foods they have tried that contain cranberries.
- Cranberries are thought to have been eaten at the First Thanksgiving, and we still serve cranberries or foods made from cranberries during our present day Thanksgiving celebrations. During the late 1600s, wild cranberries were used by the Native Americans for food.
- Measure 2 cups of cranberry juice and pour juice into tall, clear jar.
- Ask students to predict what will happen when 2 tablespoons of baking soda (a base) is added to the cranberry juice, which is naturally acidic. Add baking soda to the juice and observe the reaction. Students will notice fizzing, bubbling and a change is how the liquid appears.
- Wait two minutes and see if any other changes occur. The juice should start to change colors.

## THE SCIENCE BEHIND THE LESSON

Baking soda is a base; so it will foam when it reacts to the acidic juice. Then the baking soda reacts with the anthocyanins contained in cranberries and other fruit with a dark red, purple or blue color.

Anthocyanins are pigments that change color depending on if they are reacting with an acid or a base. Because cranberries are naturally acidic, the anthocyanin reacts to the acid to give cranberries their red color. However, if you change the acidity, you also change the color. (This is what we did when we added baking soda to the juice).

Food scientists believe eating or drinking foods with anthocyanins lower the risk of heart disease, cancer and memory loss.

## RELECTION

1. What surprised you about the experiment?
2. What other kinds of fruit or juices have anthocyanins?
3. What was the color of your juice at the end of the experiment?

## ADDITIONAL RESOURCES

- Thanksgiving Science Experiments  
<https://fromabcstoacts.com/thanksgiving-science-experiments/>
- Anthocyanins  
<https://www.todaysdietitian.com/newarchives/030314p20.shtml>

## WHO WE ARE

4-H began over 100 years ago and is the largest youth development program in the nation. 4-H prepares young people to be leaders in their community and around the world through hands-on experiences alongside their peers and caring adults. 4-H delivers research based programming and positive youth development. For more info visit: [extension.purdue.edu/4h](http://extension.purdue.edu/4h)