

Innovative Iowans: Clويد H. Smith

Activity Overview: What is your favorite snack to eat while watching a movie? For many people, popcorn is the snack of choice. This Innovative Iowans program highlights the career and legacy of Clويد H. Smith's work with the Iowa company, Jolly Time Popcorn. Young historians can head into the kitchen to experiment with dancing popcorn kernels, and learn about the science behind chemical reactions.

Connection to Iowa History

A famous brand in popcorn, Jolly Time, has roots in the Iowa community of Sioux City. Clويد H. Smith first began his career in Odebolt, Iowa with a variety of different jobs including dentist, oil driller, and owner of a telephone company. Following his move to Sioux City in 1912, he used the money from the sale of the telephone company to purchase farm land. He grew popcorn on his farm and transported it by wagon to Sioux City. His family would sell 75,000 pounds of popcorn within the first year of their business. As time passed, the company continued to grow and is still owned and operated by the descendants of Clويد H. Smith.

Chemical Reactions

A chemical reaction occurs when two or more substances combine into a new substance. In this activity, when an acid (vinegar) and a base (baking soda) combine, it creates a gas called carbon dioxide. The carbon dioxide bubbles will lift the kernels causing them to dance. Then the kernels will fall as the bubbles eventually pop.



Instructions ([Video Instructions Available](#))

- 1 Prep.** Gather the needed materials for the experiment. It may get a little messy, so have a towel ready for any possible spills.
- 2 Predict.** Before starting the experiment, make guesses for the outcome. Ask yourself: What do you think will happen and why?
- 3 Fill.** Fill either a tall glass or mason jar with 2 cups of water.
- 4 Mix.** Into the glass of water, add 2 tablespoons of baking soda. Stir well to mix thoroughly.
- 5 Add.** To the water mixture, add all the the popping corn. Wait until all the kernels have settled on the bottom of the glass before the next step.
- 6 Combine.** Slowly pour the vinegar into the water mixture. No need to stir.
- 7 Observe.** Step back from the glass after adding the vinegar. It may take a few moments for the chemical reaction to occur.

Materials

- Glass or Mason Jar
- 2 Cups Water
- 1/4 Cup Popcorn Kernels
- 2 Tbsp Baking Soda
- 1 Cup Vinegar

Instructions continued on next page

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Instructions continued

- 8 **Record.** After watching the chemical reaction, take a few moments to record your observations of the experiment. Were your predictions correct? If not, what could you do to change the results?
- 9 **Repeat.** This experiment can be repeated several times. Try changing the amount of vinegar and baking soda to see different results in future rounds of this experiment.
- 10 **Share!** After you complete your experiment, share your work with the State Historical Museum of Iowa. Email a photo of your dancing popcorn to museum.education@iowa.gov. We want to share your creation with others!
- 11 **Questions to Spark Learning**
 - Why do you think someone like Clويد H. Smith decided to get involved in the popcorn business? If you had to start a new food company, what type of food would you like to make?
 - Besides popcorn, what are some of your favorite movie snacks?
 - Do you know any other food brand with Iowa roots? If so, what are the brands?

Additional Resources

If your young historian would like to learn more about this topic, explore these additional resources below.

- [Why Do We Eat Popcorn at the Movies?](#) - Smithsonian Magazine
- [Jolly Time Popcorn Company History](#)
- [Clويد H. Smith Biography](#)
- [Chemical Reactions](#) - Britannica Kids

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Initial Observations

Use the space below to write your initial observations before the activity.

What do you think will happen when the baking soda and vinegar are combined?

What do you think will happen with the popcorn kernels after everything is combined?

Why do you think these things will happen?

Additional Observations (Use this space for any additional notes)

Final Observations

Use the space below to write your observations during the experiment.

What happened to the popcorn kernels when you combined the vinegar with the baking soda together?

Was your initial prediction correct? If not, what was different?

Additional Observations (Use this space for any additional notes)