

Goldie at Home: Innovative Iowans



Activity Overview: Although weather reporting has changed with new technology, past and present Iowans have anxiously awaited the weather report to find out how much snow is on the way. This Innovative Iowans activity highlights a famous Iowa newscaster who reported some of the state's most ferocious winter storms. You will observe liquid density and create chemical reactions while making your own snowstorm to enjoy indoors. No need to put on your snow boots and winter coat to enjoy this snowfall.



Connection to Iowa History

Reporting the news and the weather is an important job, especially in the event of a snowstorm. Someone who reported many snowstorms in Iowa over the years was Russ Van Dyke, who was born on Aug. 28, 1917. In 1945, he began work at radio station KRNT in Des Moines, which later transitioned into the TV broadcast station KCCI. In more than 30 years, Van Dyke served many different roles KRNT/KCCI, including main anchor, until his retirement on March 11, 1983. The [1955 Weather Screen](#), which is a see-through map of the United States, was first used by the KRNT news team to report the weather during newscasts. Using a marker, the reporter would write important weather information on the map in the corresponding locations. The map, now in the State Historical Museum of Iowa's collection, contains a note written by Van Dyke in the upper left corner that states, "Don't Forget Me."

Science Behind the Snowstorm

This activity highlights chemical reactions and liquid density. The oil and water separating is a visual example of different densities of liquid. Water molecules are one oxygen atom and two hydrogen atoms. The molecular structure of oil is nonpolar and is repelled by water molecules. Oil and water do not mix, but instead repel each other. This activity also shows a chemical reaction between Alka-Seltzer tablets and water. The crushed-up tablet contains an acid, sodium bicarbonate, which releases carbon dioxide as bubbles when mixed with water.

Instructions

- 1 Predict and record.** Make sure to use the ["Let It Snow" activity worksheet](#) during this experiment to make predictions and record results.
- 2 H₂O.** To begin, add one cup of water to the container of your choice.
- 3 Color.** To the water in the container, add two teaspoons of white paint. Mix together. Optionally, add glitter to the mixture at this time.
- 4 Top it off.** Add three cups of oil to the container with the water/paint mixture. It will not mix.
- 5 Smash and fizz.** Smash the Alka-Seltzer tablets into smaller pieces. Drop the smaller pieces of Alka-Seltzer into the oil/water/paint mixture one at a time.

Instructions continued on next page

Materials

- ["Let It Snow" activity worksheet](#)
- Cup, jar or bottle
- Vegetable or baby oil
- Water
- White washable paint
- Alka-Seltzer tablets
- **Optional:** Glitter

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Instructions continued

- 6 **Observe.** Watch and observe the chemical reaction. Keep adding additional tablets to make the snow continue.
- 7 **Share!** If you would like to share your creation with the State Historical Museum of Iowa, please email photos to museum.education@iowa.gov. We want to share your creation with other young historians!
- 8 **Questions to Spark Learning**
 - Why do you think weather reporting was important to people living in Iowa in the past? Why is it important now?
 - How do you think weather reporting has changed over time? Consider the weather board from the museum collection, and also think about how you find out about the weather today.
 - What activities in Iowa rely on the weather? Think about agriculture, sports and other activities that are outdoors.
- 9 **Additional Resources**

Explore these resources below to learn more about Russ Van Dyke and Iowa weather history.

 - [Iowa Weather and Its Impact Primary Source Set](#)
 - [Des Moines Broadcasting - Russ Van Dyke Photographs](#)
 - [State Historical Museum of Iowa - KCCI Weather Screen](#)

"Let It Snow" Activity Worksheet

Predictions

Answer these questions prior to starting the activity.

What do you predict will happen when you combine the oil and water together?

What do you predict will happen when you add the Alka-Seltzer to the liquids?

Do you think your experiment will succeed? Why or why not?

Activity Observations

Answer these questions during the activity.

What happens when you combine the water and oil? Why do you think the liquids reacted in this manner?

What happened when you added the Alka-Seltzer to the liquids? What do you think caused this reaction?

Were you able to create "snowfall" inside your container? Why or why not?

Conclusion

Answer these questions after the activity.

What do you think caused the "snowfall" in the container?

If you had to change anything about the activity, what would you change if anything?

Do you have any questions about the activity that have not been answered?