



Snowfall Activity 4

The Snowflake Game

Objectives and Standards

- To learn what comprises a snowflake or raindrop; dust, pollen, other small particles, and water vapor.

NSTA Standards Addressed

Content Standards

A, B, D, F

4-H SET Abilities Addressed

Predict

Observe

Communicate

Infer

Question

Summarize/Relate

Supplies Needed

- a group of at least 10 people
- something to use as an identifier for individuals (stickers, hats, etc.)

Background

Water isn't the only thing that travels around in our atmosphere. Dust, pollen, and other small particles become incorporated into our atmosphere and become the nucleus for water vapor to settle on, creating rain and snow. This activity helps students understand the components of clouds, snow, and rain

CoCoRaHS Extension Ideas

In the summer, while you are recording your rainfall data for CoCoRaHS, take care to wash your rain gauge very well before placing it back for the next day's collection. After it rains, record the amount of rainfall, then pour the water into a white bowl or plate and allow it to evaporate. After it evaporates, observe the bowl and discuss where the small particles now present in the bowl came from.

This can also be done using snow, but be sure to collect clean looking snow that has freshly fallen, otherwise dust and dirt can collect from human activity near the snow pile.

Activity

1. Break participants into two equal groups; water molecules and dust particles. You may wish to give each participant a visual representation of their group (like blue and brown stickers, hats, or by blindfolding the dust particles).
2. Tell participants to 'drift around' the atmosphere slowly and quietly.
3. When they bump into someone from the opposite group (water vapor into dust particles), they join hands. Multiple waters may attach to a single dust particle, but not the reverse.
4. As participants pair up, they continue to drift around the room until most or all water molecules have attached to a dust particle. Yell freeze to pause gameplay and prompt discussion.
5. Repeat the game with less water molecules and more dust particles, or the reverse. Have students predict what will change, and compare it to the real-world scenario.

Discussion

Snowflakes are created by water vapor bumping into tiny dust particles, and through the process of sublimation, the water vapor turns into an ice crystal. This ice crystal grows by bumping into other water vapor molecules and dust particles. When the molecule becomes heavy enough, it falls to the ground as precipitation. If there are lots of water molecules and only a few dust particles, either less precipitation will fall or the snowflakes/raindrops will be much larger. If there are lots of dust particles, more or smaller snowflakes/raindrops will be able to fall.





Please send us your feedback!

As a 4-H Educator, you know what has worked well, what has not, and how we can improve the *Tracking Climate in Your Backyard* curriculum. Please share your feedback about the curriculum. We'd love to receive copies of any reports or newspaper coverage about completed *Tracking Climate in Your Backyard* projects.

Fax or mail your completed feedback to Trisha Smrecak, Museum of the Earth, 1259 Trumansburg Rd., Ithaca, NY, 14850 or fax to: 607-273-6620.

Check the activity completed	Suggestions for improving the activity
Rainfall Activities <input type="checkbox"/> Make It Rain <input type="checkbox"/> Where Does the Rain Come From? <input type="checkbox"/> Stormy Weather	
Snowfall Activities <input type="checkbox"/> Confetti Snow Maps <input type="checkbox"/> How Much Water? <input type="checkbox"/> Edible Education <input type="checkbox"/> The Snowflake Game <input type="checkbox"/> Snow Journaling	
Temperature Activities <input type="checkbox"/> Energetic Weather <input type="checkbox"/> Shade of the Old Oak Tree <input type="checkbox"/> Temperature Through Time	
Wind Activities <input type="checkbox"/> Why Does the Wind Blow? <input type="checkbox"/> Make Your Own Wind Dial	
Hydrologic Cycle Activities <input type="checkbox"/> The Incredible Journey <input type="checkbox"/> Understanding Evapotranspiration <input type="checkbox"/> Pinecones: Mother Nature's Weather Forecasters <input type="checkbox"/> What is a Watershed?	
Climate Activities <input type="checkbox"/> Where is My Backyard? <input type="checkbox"/> Soak up the CO ₂ <input type="checkbox"/> Buckets O' CO ₂ : How Your Backyard Can Change the Ocean <input type="checkbox"/> Raise the Waters	
CoCoRaHS Participation <input type="checkbox"/> Precipitation measurements and other activities	

Please share your suggestions for improving the Tracking Climate in Your Backyard curriculum.

How have you used Tracking Climate in Your Backyard in your community?

Thank you for completing the Tracking Climate in Your Backyard curriculum feedback. We appreciate learning about how you are using the curriculum and receiving your suggestions for improving it.

Organization _____ **Contact Person** _____
Email _____ **Date** _____