Do You Want to Catch a Snowflake?

Do you love to bundle up and play in the snow? It can be so much fun to throw snowballs, make snow angels, and build snowmen! But did you know that the snow that falls during the winter and spring are also really important for our state? Here in Wyoming, a large part of our summer water supply comes from snowpack in the mountains. When we see lots of snow in the mountains during winter and spring, we know that there will be plenty of water for our farmers and ranchers, our city water supplies, and our rivers, lakes, and streams. In this activity, we're going to bundle up and head outside to learn more about those tiny flakes of snow that become such an important source of water!

In this activity, your family will:

- Learn more about various types of snowflakes and how they form
- Observe and classify snowflakes by their structure and type
- Interact with the snow to observe the properties of the snow on the ground
- Create a model of the snowflake in the form of a drawing or cutting

Materials needed:

- Warm clothes for going outside
- A dark-colored snowflake catcher *(mitten, sock, sleeve, stuffed animal, etc.)*
- Magnifying glass or camera with a zoom *(the camera in a phone works well)*
- Paper
- Pencil
- Colors
- Scissors

Key Words to know:

Snowflake – a feathery ice crystal, typically displaying delicate sixfold symmetry.

Preparation:

- Learn about the different types of snowflakes and how they are classified in this snowflake guide published by NASA: https://www.nasa.gov/pdf/183517main_snowcrystals.pdf
- Watch this video to learn more about how snowflakes form in the atmosphere: https://www.youtube.com/watch?v=c5rJtNiDeoc
- Check out this infographic from Oxford University Press explaining the snow-cycle: https://42796r1ctbz645bo223zkcdl-wpengine.netdna-ssl.com/wp-content/uploads/2015/12/OR-snow-lifecycle.pdf

Do the Activity:

1. Review the resources in the preparation section to learn more about different types of snowflakes and how they form.
2. Find something fuzzy and dark to catch snowflakes on *(i.e. mitten, sock, sleeve, stuffed animal, etc.)* You can also use your coat, hat, or mittens if they are dark and fuzzy.
3. Dress warmly and head outside. Try to find a spot out of the wind where flakes are falling nicely.
4. Hold your snowflake catcher so that snowflakes land can on it. *(While you wait for them to land on your snowflake catcher, see if you can catch some on your tongue – it's fun!)*
5. Look carefully at the flakes on your snowflake catcher. *(If you use a magnifying glass or a camera that zooms, you can see more details on the flakes.)* Things to look for:
   - Shape
   - Size
   - Design
   - Color of 1 flake. Color of a pile of flakes.
   - Are they singles, or are they clumping?
   - What happens when you breathe on them?
   - Try to make a snowball out of the new snow. Can you? Why or why not?
6. Shake your snowflake catcher off and catch a new batch. Repeat as many times as you want!
7. If you're somewhere that has some deep snow, dig deep into the snowbank and see what the snow looks like after it has been sitting on the ground for a while. It changes depending upon the temperature. What do you see at the bottom of the hole you dug?
8. After you've finished observing snowflakes and have enjoyed the snow as much as you can before getting too cold, head inside to finish the activity.

9. To finish the activity, choose one or more of the options below:
    - Cut paper snowflakes using paper and scissors. (Any paper will work, even if it's scrap paper with writing on it.) Experiment with how to fold your paper to make snowflakes with different numbers of points.
    - Draw a beautiful snow scene or try drawing a large snowflake-like one you caught on your snowflake catcher. Color your drawing however you like.
    - Make a snowflake identification chart of your own. Create a chart with pictures and descriptions of different snowflakes you observed. You can use the snowflake guide to help you make it more accurate and label the different snowflakes on your chart.

Learn more about where the snow goes as it melts, and what that means for us in Wyoming with these lessons and resources from the Wyoming Stewardship Project

2nd Grade:

- **Agriculture - Lesson 3** Students learn where certain crops are grown in Wyoming and hypothesize reasons for some areas being better suited for growing crops than others (water availability, elevation, and topography).

4th Grade:

- **Agriculture - Lesson 2** Students make the connection between the geography/climate and the success of agriculture in Wyoming.
- **Outdoor Recreation & Tourism – Lesson 5** Students learn that one way we can care for our land is to try and reduce the impacts of natural disasters.