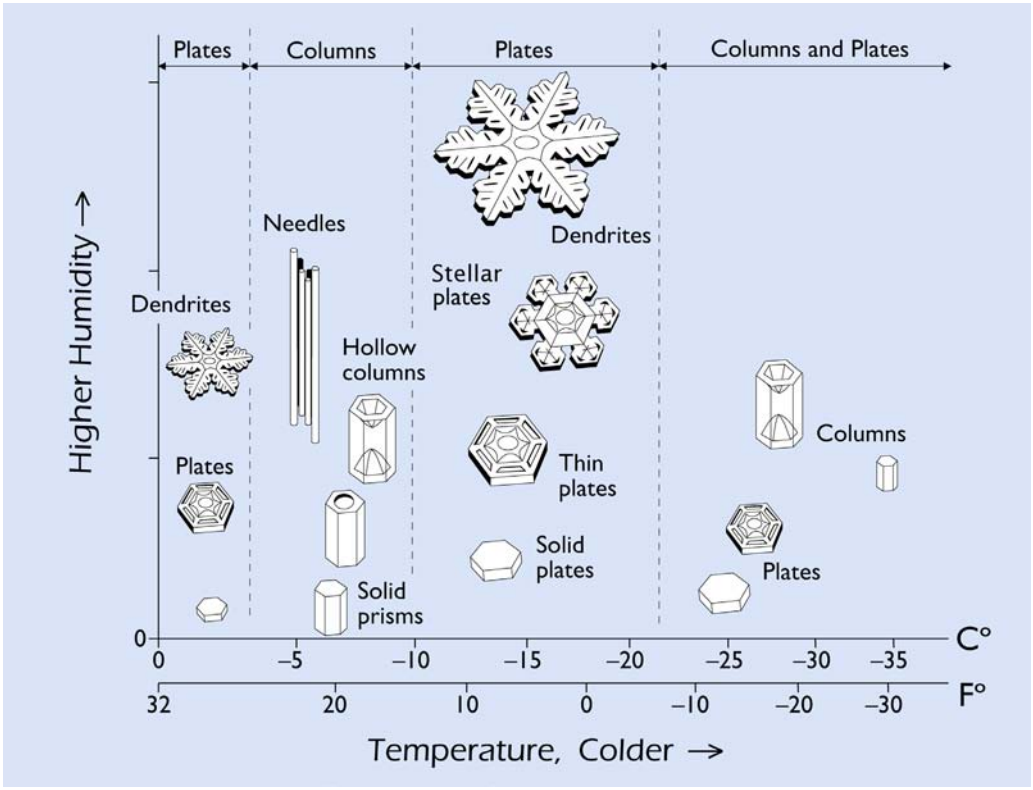
Winter's Wonder: Snow

Written By: Kirsten Tomlinson, Director of Education at Environmental Learning Centers of Connecticut

Why does it snow in the winter? Are all snowflakes the same? Let us take a closer look at how snow forms to help us answer these questions. Snow forms as water vapor in the clouds collects on particles of dust or pollen and freezes. For this to happen the temperature up in the clouds must be below freezing (<32°F). When the water vapor freezes it forms an ice crystal. As the ice crystal moves through the atmosphere additional water vapor collects and freezes to it forming the structure that we know of as a snowflake. Once the snowflake is heavy enough it will fall from the clouds down to the earth.



Now that we know how snow forms, let us take a closer look at an individual snowflake. Any snowflake that you look at will have six sides. This is because when the water molecules that make up the water vapor freeze, they always form a hexagonal (6-sided) prism. This hexagonal prism is the base that the rest of the snowflake will form around as the additional water vapor collects and freezes as the snowflake makes its journey from the clouds to the earth. Along the snowflakes journey it encounters different temperatures and humidity levels. These different conditions determine the shape of the snowflake and how it branches (See diagram). Since each snowflake encounters slightly different conditions during its journey every snowflake is unique. So next time it snows, look outside, and think about how many snowflakes you see and how amazing nature is that each one is different.

Activities to Try:

Examine a Snowflake: When it is snowing go outside with either a black piece of paper or fabric. Allow the paper or fabric to get cold, so that the snowflakes do not melt when they land on it. Once your material is cold, try to catch a snowflake on it. Use a magnifying glass to examine your snowflake. Then try catching another. Does it look identical to the first?

Melting Snow: Fill a clear jar with snow. Record what happens over time to the level of the snow in the jar. How long does it take to start to see water in the jar? How much water is there after all the snow melted?

Crystal Snowflakes:

For directions on how to make a crystal snowflake visit:

https://www.wikihow.com/Make-a-Borax-Crystal-Snowflake

Environmental Learning Centers of Connecticut, Inc.
BARNES NATURE CENTER • INDIAN ROCK NATURE PRESERVE
http://elcct.org

CCSS.ELA.Reading: Informational Text: K-5.2, K-5.3, 4.5, K-5.7, K-5.8

NIE NEWS IN EDUCATION