

The Science of Snowflakes: Facts and Activities for Children

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Six is the magic number for snow - did you know that? If you had a big magnifier and stepped outside with your children on a cold winter day to watch snow fall from the sky, here is what you might observe - six-sided hexagonal crystals, needles or flat six-sided crystals, and a wide variety of six-sided shapes. All snowflakes are a combination of the number six for simple chemical reasons - they're all variants of the water molecule. Despite all snowflakes having six sides, not two snowflakes are exactly identical. How crazy is that? Here are a few more fun facts about snowflakes as well as simple science activities you can do with your children.

Where Do Snowflakes Come From?

As obvious as this may sound, snowflakes—or more scientifically, snow crystals—are formed in clouds. However they are not frozen raindrops, as that's called sleet or hail. Snowflakes are a different cold weather phenomenon formed from water vapor that condenses around a tiny particle—the seed crystal, usually a speck of dust—in clouds. Cloud droplets condense around the seed crystal and freeze on the surface of the particle, patterns emerging as the crystals grow.

The shape of snowflakes is determined by the altitude and temperatures at which they are formed. When several crystals stick together or create puffy white balls, they become snowflakes. Once the snowflakes are heavy enough, they fall to the earth. The average snowflakes fall at an average speed of 3.1 miles per hour!

How Can You Watch Snowflakes?

The good news is, you don't need a fancy microscope to see the crystal formation of a snowflake. A cheap 5X magnifier, folding or Sherlock Holmes-type, is enough to start your snowflake-watching experience. Just make sure you have one handy, in your pocket or your purse, when snow starts falling.

Since the trick is to watch the snowflake before it melts, don't collect snowflakes on your hands. Watch them on the sleeve of your coat, on a

dark square of felt or black paper. Imagine the thrill when your children will be able to distinguish tubes, columns or plates. Once you master the art of snowflake watching, print out this [snowflake table](#) and ask your children to recognize some of the patterns. Snowflake I-spy!

- Activity: Make a [Snowflake Cards Matching Game](#).

How Can You Make Snowflake Science At Home?

Here are a few ideas so children make their own snowflakes using varying materials such as...

- Paper: this classic classroom activity starts with a simple piece of white paper. To be as close as possible to the real thing, try to fold the paper in 6 as shown [here](#). With a pair scissors, have the children cut out patterns. They could be random fantasy snowflake patterns or real snowflake patterns taken from the snowflake table mentioned above. Hang snowflakes with strings from your ceiling or with tape on your windows for that special "winter wonderland" touch.
- Pipe Cleaners (from [MarthaStewart.com](#)): Twist three 5-inch pieces of pipe cleaner together to form a snowflake. Add a 1 1/2-inch piece to each point to create "branches". Tie the flake with string to a pencil. Find a big enough jar so the suspended flake won't touch the sides. Fill with 3 tablespoons borax (such as the 20 Mule Team Borax Laundry Booster found in the laundry soap aisle of grocery stores) and 1 drop blue food coloring per 1 cup of boiling water. Hang the snowflake in the jar. Let sit overnight. Remove.
- Felt: need a snowflake felt coaster for hot chocolate cups at home? Nothing's easier than making your own snowflake felt coasters. Since the coaster is going to come into contact with heat, try to find felt that's made of wool. Print this [snowflake template](#) and cut it out with scissors. Apply it to the piece of felt with pins and draw the outline with a fine-tip marker or pencil. Remove the paper template and cut the outline with embroidery scissors. If you want the snowflake to stand out, stitch it to a circle of a dark colored felt. Or you can glue two identical snowflakes for a sturdy coaster.
- Paper and Melted Crayons: Kids are going to fight or this one! First you need to prepare at least 2 or 3 paper snowflakes per child as per the instructions above. When the paper snowflake is ready, put it on an aluminum foil covered hot frying pan. Have the children stand up on a chair holding chunky wax crayons. When they'll press the crayon slowly on the snowflake, the crayon will melt! Watch the children

closely so they don't get burnt. Once colored, remove the snowflakes from the heat and wait a few minutes. The melted-crayon snowflakes will have vibrant colors and get stiff when cold. Awesome!

You can also make snowflakes out of [macaroni](#) or [cereal boxes and yarn](#).

Isn't that crazy?

And now get ready to sing your heart out: Let it snow! Let it snow! Let it snow!