



# Toilet Paper Roll Snowflakes

Bring on the snow! In Texas, we have to make our own one-of-a-kind snowflakes since we rarely have cold weather. Get in the winter spirit and design a unique, festive toilet paper roll snowflake.

## TEKS:

M 4.6B: The student is expected to identify and draw one or more lines of symmetry.

SCI 2.8C: The student is expected to explore the processes in the water cycle, including evaporation, condensation, and precipitation, as connected to weather conditions.

SCI 4.5B: The student is expected to predict the changes caused by heating and cooling, such as ice becoming liquid water and condensation forming on the outside of a glass of ice water.

## Materials:

- Aluminum foil
- Cardboard
- Glue stick
- Hot glue gun and sticks
- Pen or pencil
- Ruler
- Scissors
- Spray paint (preferably silver or white)
- 1-2 toilet paper rolls

## How To:

*Part 1: Divide the Toilet Paper Roll into Sections*

1. Flatten the toilet paper rolls a bit.
2. Using a ruler, mark lines along the paper roll approximately 1.5 cm apart.
3. Cut the paper rolls into thin sections along your markings using a pair of scissors.



<http://www.instructables.com/id/Paper-Roll-Snowflakes/>

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## Part 2: Design the Snowflake

1. This part is all up to you! Lay out your paper roll pieces into different patterns to design a unique snowflake.
2. If you need help getting started, you can take 7 of your paper roll sections and put them together to make a flower. Then just start layering other sections until you like the design you have!
3. Once your snowflake is how you want it, use the hot glue to join the pieces together. **(An adult should supervise using hot glue!)**
4. Bring your snowflake to an open, outside area. Spray paint your entire snowflake with the color that you chose! Be sure to wear gloves if you are going to hold it while you spray. You can also line the ground outside with newspaper and then spray. **(An adult should supervise using spray paint due to fumes and flammability!)**
5. After spray painting, let your snowflake dry for 30 minutes or until the paint is dry.



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## Part 3: Cut the Base

1. Get a piece of cardboard that is larger than your snowflake.
2. Using a pen or pencil, trace the outline of the outside of your snowflake onto the cardboard and then cut it out.
3. Take a piece of aluminum foil that is larger than your snowflake and gently crumple it up so that it's not as smooth anymore. Be careful so it doesn't rip or break.
4. Glue the cardboard snowflake tracing on the back of the foil using a glue stick. You can trim the excess foil or fold it behind the cardboard.
5. Once you have the aluminum foil base complete, use hot glue to attach the snowflake structure on top of the base. It might be best to do dots of glue where the cardboard pieces meet and then do a thin layer of glue on the outside edges.
6. Your snowflake is done! Now hang it up as a festive winter decoration!



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### **STEM Explanation:**

When the temperature outside drops to below freezing temperatures, moisture in the air bring about snow and ice. If you were to pick up a snowflake from the ground and look at it underneath a magnifying glass, the shape of the snowflake is quite detailed. Some snowflakes might appear flat and branched out, while others are more hexagonal or needle-like. Each snowflake is an individual snow crystal, which gets formed when water vapor condenses into ice rather than a cloud. A seed crystal is formed around a small piece of dust in the air, and as water vapor molecules continue to condense and freeze around the seed crystal, the shape continues to get larger and more complex. Upon looking at a snowflake that has fallen onto the ground, its final shape is much like a history lesson of how it grew. The outermost part of the crystal is the most recent addition, while the middle part was the very beginning stages.

### **Career Connection:**

*Meteorologists* are scientists who study the weather. More specifically, they look at how weather affects the environment while also predicting future weather patterns. This greatly helps the community by preparing them for upcoming storms and investigating climate trends. These meteorologists use their knowledge of science and math to make these predictions.

### **Resources:**

<https://www.pbs.org/newshour/science/the-science-of-snowflakes>

<http://www.instructables.com/id/Paper-Roll-Snowflakes/>

<https://bigfuture.collegeboard.org/careers/science-meteorologists>

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