

Make a Snowflake Suncatcher

Explore sunlight and snow while practicing beading!

Materials:

Large plastic beads (include some translucent beads to shine in the sunlight), two pipe cleaners, scissors, thread or string.



Caution: Beads can be a choking hazard. Closely supervise children during this activity.



Instructions:

Step 1: Cut two pipe cleaners in half. Set one piece aside, and use the other three to assemble the snowflake:

Twist two pipe cleaner pieces together in the middle to form an X shape. Take the third piece and twist it around the other two (see diagram). Spread out the “branches” to form a snowflake.



Step 2: Thread beads onto each branch. Experiment with patterns and colors. Add translucent beads to shine in the sunlight!

Step 3: Thread a final bead on the end of a branch, leaving room between it and the rest of the beads. Fold the end of the pipe cleaner over the bead and twist to secure (see diagram). Repeat for each branch.



Step 4: Tie a piece of thread or string to the end of one branch. Hang your suncatcher in a window and enjoy the winter sunlight reflecting off the snowflake!

Snow and Ice Cool the Earth

Have you ever seen snowflakes shining in the sunlight? The ice crystals in snow bounce the light around, reflecting it and making the snow look white or blue-ish. More compact snow reflects more sunlight.



Right: Snowflake. Image by Aaron Burden, Wikimedia Commons.

A snowflake is an ice crystal formed in a cloud. When it gets heavy enough, it falls to the ground as snow. In the winter, regions close to the Arctic are covered in snow for several months. In some places, it is cold enough for snow and ice to stay on the ground all year.



*Glacier Bay National Park, Alaska.
Image: pickpik.com*

Snow and ice reflect some of the Sun's light and energy back into outer space. This is called the **albedo effect**. Albedo is the measure of how much light something reflects. Dark surfaces, like the ocean, absorb more sunlight. White surfaces, like snow and ice, reflect more sunlight, keeping the Earth cool.

Ice and snow at the Earth's poles help cool the Earth. Without snow and ice reflecting sunlight, the atmosphere becomes much warmer. Scientists at NASA observe and measure the changes in snow and ice cover. As the Earth warms from climate change, more ice and snow melt, and the darker land and water absorb more sunlight. This speeds up warming.



*Arctic sea ice in August 2016.
Image: NASA Goddard.*

Test the Albedo Effect At Home!



Put two pieces of cloth, one light and one dark, out in the sun or under a bright lamp. After a few minutes, feel each piece. Which one feels warmer? Which one feels cooler? You can also test the albedo effect on a sunny day by stepping onto light and dark surfaces with bare feet!