January 2008

Get Outside!

Young Naturalist  Nature Activity Page

Discover the Warmth of Snow!

Yes, you read right - warmth and snow! But how can snow be warm? Try the activities on this page and find out!. You can do these at a nearby nature preserve, park, school playground, or right in your own backyard. Find a sister, brother, friend, or parent to explore with you. Have fun!

Where is it the Warmest?

If you were a little mouse looking for a place to snuggle down on a cold winter's day, which layer of snow would you choose to take your nap in - upper, middle, or lower)?



Materials Needed
An area of undistrubed snow, preferably at least 12" deep.
A shovel
A thermometer
Pencil and paper

Steps
Put the shovel straight down in the snow and pull it towards you so that you have a side view, or profile, of the snow layers. . If you don't have a shovel handy, just flatten your hands and use them like a shovel.

Take a temperature reading on the top of the snow, halfway to the ground, and just above the ground level. Make sure to insert the thermometer into the snow and leave it there for a few minutes at each level. Write down each temperature on your paper.

Where was it the warmest? It should be warmest just above ground level. Why?

Melting and Measuring

What makes snow "fluffy"?

Materials Needed
Snow
A bowl
Ruler
Pencil and paper


Steps
Place the bowl outside to catch snowflakes. When the bowl is full, measure the depth of the snow and write the amount on your paper.

Let the snow melt and then measure the depth of the water. What is the difference in the measurement between the snow before and after it melted?

The level of water is much less than the level of snow. Why?

Which Freezes First?

Materials Needed
Jello/Flavored Gelatin
Plastic Containers with Lids

Steps
Make some Jell-O or other flavored gelatin and pour equal amounts into two separate plastic containers of the same size. Cover each container with a lid.

Place one container on top of the snow and the other underneath the snow. Check them often to see how long it takes for the gelatin to freeze in each one.

Which container do you think the gelatin will freeze in first? It should be the one on top of the snow. Why?

Snow Insulation

All of the above experiments have to do with the insulating properties of snow. The ground contains heat, which it receives from the earth's hot core and from the sun during the warmer months. The heat from the ground rises and flows upward through the snow. The snow has air pockets that slows some of the heat, keeping the temperature warmer. The snow acts like a blanket that keeps you warm at night. It traps heat and keeps things under it at a higher temperature.

In *Where is it the Warmest?*, the warmest temperature should've been just above ground level. That layer of snow is clos-est to the heat source (the ground) and has trapped air above it holding in some of the heat.

In *Melting and Measuring*, the snow depth is higher before it melts, because some of the space is taken up by air molecules in between the snowflakes.

In *Which Freeze's First?*, the container on top of the snow should freeze first because it is exposed to the wind and does not have the insulating snow above it to keep it warmer for a longer amount of time.

Henry Knows!

Have you ever seen tiny black dots on the surface of the snow? At first glance, it looks like specks of dirt, and perhaps it is, but it is more likely a small, wingless insect called a springtail.

Springtails, also known as "snow fleas", can be found by the hundreds in many places, including at the base of trees or an area surrounding a hole in the snow on warmer winter days. Mainly vegetarians, springtails find algae, pollen, and leaf mold tasty. They live mostly on the surface of soil, but will hang out on pond surface's too.

Snowfleas are about 1/16 of an inch long!

These little critters got the "spring" in their name because they have two appendages, or leg-like structures, on their last body segment. These appendages are held against their bodies by clasps. When these clasps are opened, the "legs" spring against the ground, making the insect move a few inches away. They appear to leap like fleas, thus they are often incorrectly called snow fleas.

The next time you're out on a warm winter day, keep an eye out for little black specks in the snow. Bring a small hand lens to get a closer look!

Little Traverse Conservancy
3264 Powell Road
Harbor Springs, MI 49740-9469

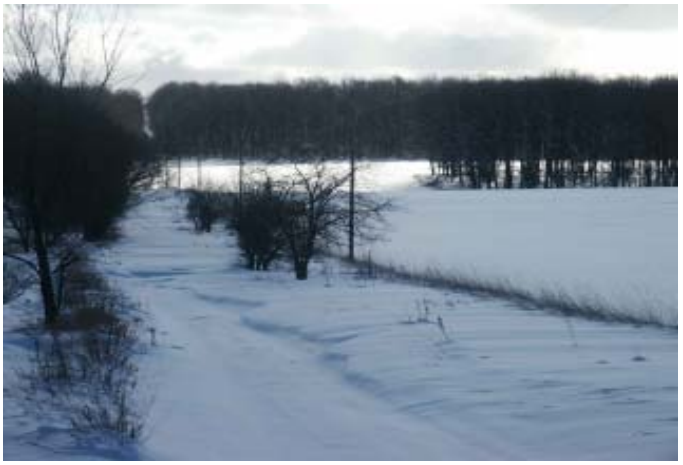
Explore a Nature Preserve!

Good Hart Farms

Miles of groomed trails make this Little Traverse Conservancy Nature Preserve an ideal outdoor winter destination. It's a great place for cross-country skiing or snowshoeing with family and friends.

This 595 acre preserve was donated in 2002 by Ed and Maureen Mayne. They started a fine hay farm operation on the property after they bought it in 1994. Portions of the property are still being hayed as part of the management of the preserve. Natural features include forests dominated by maple, beech, and ash trees, meadows, old orchards, and pine plantations.

Enjoy a winter morning or afternoon exploring the trails of this wonderful place and keep an eye out for tracks and other signs of animals along the way.



To reach the winter parking area from the intersection of State and Robinson Roads in Emmet County, take State Road west 2 1/4 miles. Check out the Conservancy website for directions and maps at www.landtrust.org or contact the Conservancy office at 231-347-0991.