

the SCIENCE of SURVIVING WINTER



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HOW DO TREES KEEP WARM?

Ever wonder why trees don't freeze in winter? It's because there is sugar in their sap and this reduces the freezing temperature of the sap! Try this activity to see how sugar helps lower the freezing temperature of water.

What you'll need:

- 2 plastic cups
- Water
- Sugar
- Spoon
- Freezer (or the great outdoors!)

What to do:

- 1 Fill each cup half full of water
- 2 Add 2 heaping spoonfuls to one cup of sugar
- 3 Stir until sugar is dissolved
- 4 Place both cups in a freezer (or outside)
- 5 Check after an hour.
- 6 In which cup has the water frozen?



NOT ALL ANIMALS SLEEP THROUGH THE WINTER!

Have you ever wondered how tiny non-hibernating animals such as mice can be active outdoors when it is very cold? They tunnel through the snow which acts as insulation. When the outside air temperature is -12C, under the snow it can be a cozy 20 degrees warmer! Test this yourself.

What you'll need:

- 2 thermometers
- An area with lots of snow!

What to do:

- 1 On a cold day, carefully dig a hole into the base of a snowbank.
- 2 Place an outdoor thermometer inside the space and leave it for a few hours. Leave the second one outside in the air.
- 3 When you return, compare the temperature shown on the thermometer in the snowbank with the temperature outside. Which is warmer?

The Exploration Club for Families... NatureKids BC helps children get outdoors to play, imagine and explore in nearby nature. We are a network of volunteer-led nature clubs serving urban and rural children ages 5-12 and their families. Find out more at: www.naturekidsbc.ca. If you are already a member you can use this activity as part of your Action Awards Quest!

