What You Need:
- water
- ice or snow
- table salt or rock salt
- teaspoon
- one of the following
  - drinking glass, 100-250 mL beaker, soup can, plastic cup
- clean, flat, wood surface

What You Do:
1. Make a puddle of water about the size of a half-dollar (4-5 cm) on the wooden surface.
2. Pour water into the drinking glass, beaker, cup or soup can until it is about 1/5 full.
3. Add enough ice or snow to fill the container a little over half full.
4. Add two or three teaspoons of table or rock salt.
5. Place the container with the water/ice/salt mixture directly on the puddle of water from step 1.
6. Hold the glass in place and gently stir the mixture with the spoon until the container is frozen to the surface. If the mixture is stirred and slops over the container lip, the activity will not work.

What Happens:
The addition of the salt to ice lowers the freezing point of the ice. The mixture of salt and ice will reach equilibrium at temperatures well below the freezing point of water (zero degrees Celsius). This sub-zero mixture will cause the water outside the glass to freeze because heat dissipates toward lower temperatures.

The activity may be used in conjunction with studies on heat, cooling, temperature, thermometers, or ice cream making.

Did you ever wonder why salt is added to the ice cream freezer when making home made ice cream?

Cautions:
- Keep hands, fingers, etc. out of the solution, skin may be severely damaged by prolonged exposure to the sub-zero temperatures.
- Do not try to break loose the container from the wood table. Most likely the container will break and someone (maybe you) may be injured. Let the container warm and it will come loose by itself.
- If using a soup can, don't stick your tongue on it.

Thanks to Tim Kersey, Bethel, ME

© 2001 C. David Christensen, All rights reserved. Permission is granted to copy this sheet in its entirety provided this notice is retained.