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1-29-06 You Can CMYK
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YOU CAN by jok church

myQuestion@beakman.com
with **beakman & jax**
Google salt click images

Dear Beakman,
How does salt
make ice melt?

Kim Rutledge
Toms River, New Jersey

Beakman or Jax
P.O. Box 30177
Kansas City, MO 64112
Questions, name & address

Dear Kim,
Ice happens when water molecules are arranged into structures. Salt snips these patterns apart.

A molecule (MOL-ah-kyul) of water is the smallest chunk of water you can have, and have it still be water. It's called H₂O because water is 2 hydrogen atoms bonded to 1 oxygen atom.

With less, heat H₂O's hook onto each other and we get ice. Salt snips the parts that hook up the H₂O's, but it does not make things any warmer.

Beakman
Beakman Place

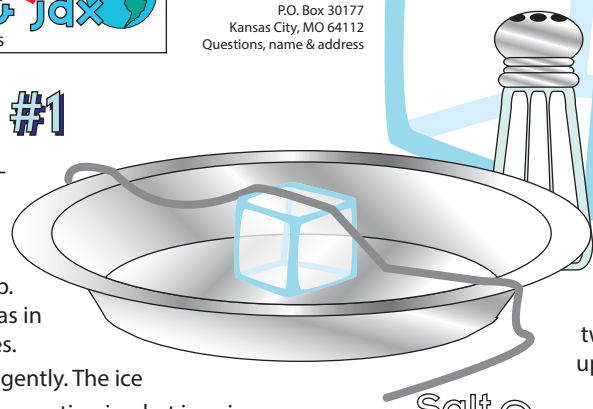
Experiment #1

WHAT YOU NEED: Ice cube - plate - string - salt - clock

WHAT TO DO:

Put the ice cube on the plate and sprinkle a few shakes of salt on top. Lay the string across the ice cube as in the drawing and wait for 2 minutes.

Lift the the two ends of the string gently. The ice cube should lift off the plate. Kim's question is what is going on



with that? What's happening?

WHAT IS GOING ON:

Well, first of all let me put in a plug here for doing this at school. Everyone can do this using paper cups instead of plates, and you can pass around a salt shaker or two. Busy teachers usually love it when someone else comes up with something to do in class.

What Is Going On:



OK, back to stuff about the thing. Water molecules hook up into this shape. It's

a

crystal of ice. The hydrogen atoms kind of glue it together.

If the H₂O's weren't attached to each other, it



would be liquid water and not ice.

One way to make liquid happen is to add energy - heat. Another way is to create a chemical reaction with salt.

Salt behaves like these scissors, snipping apart the hydrogen bonds. The water molecules separate, and that makes them a liquid again. But they are still very cold. Remember, you



didn't add heat.

Liquid water soaks into the string, but most of the dissolved salt does not soak in with it. The water in the string freezes to the ice cube because it's still below 32°F, the temperature at which H₂O's hook up into ice.



P.S. from Jax: When highways are sated, the liquid water flows off the road before it refreezes. Or that is, at least, what people hope for.

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