

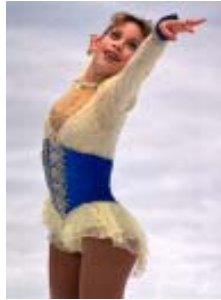


Merry Christmas  
and a  
Very Happy  
New Year!



Do you know that the Earth's glaciers and ice caps contain 68.7% of the planet's fresh water supply?

Did you know that it was another kind of ice that brought "gold" to Texas? Olympic medalist **Tara Lipinski**, who won her Gold Medal in ice skating in 1998, practiced on the skating rink at the Galleria in Houston.



Have you ever been ice skating? Do you enjoy watching the Olympic ice skaters on television?

**Ice** is lots of things: it's what happens to water in the winter in northern states. Ice is usually cloudy but can be clear. It's heavy, whitish-blue and it makes drinks cool.

Let's do an experiment to find out why ice is more likely than not to be cloudy and behave in a couple of predictable ways.

### Here's what you'll need:

- 4 containers made from the bottom sections of empty milk cartons (rinsed out with cool water)
- About two cups of tap water and food coloring, 3 or 4 drops or enough to color the water
- About two cups of distilled water
- About two cups of tap water mixed with 1 teaspoon of salt
- About two cups of plain tap water with nothing added.



Put your 4 filled containers in the freezer overnight. What do you think you will find in the morning? Will all the ice be clear? Will all the ice be cloudy? What will happen with the container that had food coloring added? Are there differences in the opacity of your ice throughout the container?

The next day, cut the paper containers off of your blocks of ice and see what happened to the water. You can identify which ice sample is which by using the following descriptions...

(1) The container with **tap water** is cloudy in some areas and clear in others because tap water has air and minerals in it that get trapped when it freezes. The clearer areas have less air bubbles and minerals than the cloudy areas.

(2) The container that was **salt water** will be the most cloudy overall because salt is a mineral that is trapped as the liquid water turns into ice.

(3) The **distilled water** freezes into the clearest ice as there are fewer impurities in the distilled liquid water than in the tap water.

(4) The **colored mixture** has separated to some extent because the concentration of color moves out of the liquid to the center and bottom of the container as freezing occurs.

Is this what happened to YOUR ice blocks?

**NOTE:** Be careful when working with food coloring so it does not spill and discolor kitchen counters or the sink.