

# Make a reverse Icicle!



A chill experiment. **Assignment: Write a good paragraph about your efforts and observations – how did it go and what did you notice?**

What you will need:

- Bottled water – personal disposable size (purified or distilled)
- An ice cube
- A baking tray with sides

Procedure:

Take your pure water in its bottle and stick it in the freezer for 2 hours and 15 minutes

Put your baking tray on the counter

Get an ice cube and put it in the middle of the tray

Go get your bottle of water and be very careful not to disturb it as you carry it to your tray (it needs to stay still for this to work)

Carefully take the cap off and pour the water very slowly over the ice cube. The super cooled water will start to freeze on contact and form a reverse icicle

Pro Tip: If you have a back-up bottle of supercooled mineral water and the first doesn't work, try a new ice cube and the other bottle.

## The science behind the reverse icicle:

Everybody knows that when you get water down to 0 degrees it freezes. Or does it? The water freezes it needs what is known as a nucleation site. It is this particular site that water crystals form around when they freeze, and under normal conditions, water has plenty of tiny bits of dust little particles and minerals that create great nucleation sites. However, if you have purified or distilled water now you have water that is just, well, water, with nothing else including any of those tiny particles that make good nucleation sites. Since you have nothing for water crystals to form around, you can cool this very pure water down all the way to -48 degrees Fahrenheit by the way average temperature in the South Pole this supercooled water. This allows you to use this process to turn this water from a liquid to a solid in a very interesting way!