



HOW TO MAKE FROST ON A CAN

It is easy to find frost on cars and windows during winter, but you can make frost anytime using a tin can!

YOU WILL NEED

- A clean and empty tin can
- Crushed ice
- Water
- Salt

WHAT YOU DO

Step 1

Fill the tin can about a quarter full of water and stir in four tablespoons of salt into the water.

Step 2

Add enough crushed ice to fill the can and wait to watch the frost form on the outside of the can!



THE SCIENCE BEHIND IT

There can be a lot of water in the air called water vapour, which is water that has evaporated from a liquid to a gas. But when it gets cold, the water vapour starts turning back from water vapour to liquid water again, and it collects on cold surfaces like windows and is called condensation. You can see this when you breathe onto a cold window and the water vapour in your breath becomes condensation on the window. When it's really cold (below 0°C), the condensation freezes to become solid ice, which we call frost.

In this experiment, the water and ice in the can made the can really cold, but it needs to be below 0°C for water to freeze, so that is why we added salt. Salt lowers the freezing point of water to below 0°C, so the can actually cools to below the freezing point of water. This means that water vapour in the air condenses on the can and then freezes to make frost! To prove that it was the salt that made frost form on the outside of the can, fill a second can with just the water and ice without the salt. With no salt in the can, only condensation should form.

If no frost forms on your can with the salt in it, it might be because there is not enough water in the air around the can. If this happens, rest the can on a wet kitchen paper towel and the water will evaporate from the towel (turning into a gas) and then condense on the can again as liquid water, where it will freeze to solid ice and make frost!

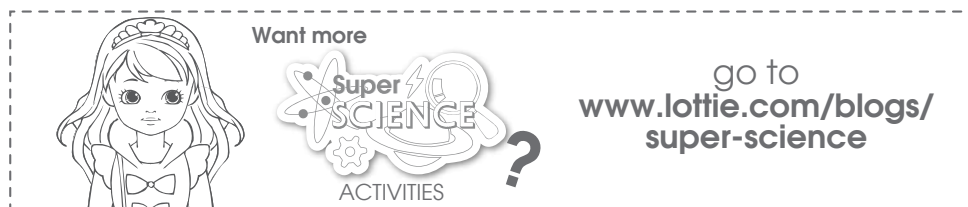


Photo Credits

- Frost forming on the can after salt is mixed with ice: CocoPreme; HubPages

