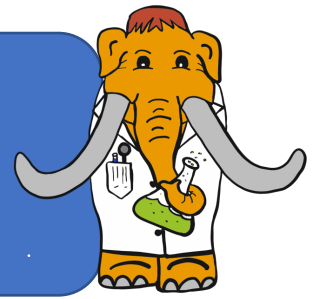


Science Saturday @ Home

Science of Frost



Gathering Supplies:

- 2 Aluminum Cans (soup)
- Ice
- Table Salt
- Tray or Plate
- Water
- Piece of Aluminum Foil

Let's see if we can make some frost on the outside of a can.

How To Steps:

1. Fill the two cans with ice cubes and place on a tray or plate. Remember to always be careful of the top edge of aluminum cans. They can be sharp.
2. Add about $\frac{1}{4}$ cup table salt to one can. Cover with a piece of aluminum foil and shake to mix. Then remove aluminum foil.
3. In the second can with ice, fill about half way with water.
4. Place the tray with the cans on a table or kitchen counter.
5. Check back after about 10 minutes. What do you notice about the outside of the two cans? Can you find frost on the outside of one can? Why would only one can have frost on the outside of it?



Exploring Frost and Dew with Max

Did You Know?

Frost is water vapor that becomes solid on an object when the object's temperature is colder than the surrounding air. Think about some mornings when you can see frost on the window of a car or on the leaves of a plant. For frost to form, the outside temperature needs to cool past the air's dew point. The dew point is where the moisture in the air gets so cold the water vapor in the air turns to liquid.

Different types of frost happen under different weather conditions. Winds, how much humidity is in the air and the air temperature can cause different types of frost to form.

Why does frost form just on the outside of one of the cans? The difference between the two cans is the salt. Salt wants to absorb water to make a solution. During this process the salt actually lowers the melting point of the ice to below freezing. This causes the can to become so cold that the moisture from the air around it collects on the outside of the can and freezes. This is why frost forms on the can with added salt!

On the other can, dew (water droplets) form because the mixture of the melting ice and water is just at freezing and the temperature outside the can is warmer, causing the dew to form but not freeze.