

Throwing Boiling Water into the Air

Heaving water into the air outside can be awesome!

Safety Note: Be aware of the wind direction and have a grown-up throw the water. Make sure water is thrown away from you.

First, try taking a pot of room temperature water outside and throw the water into the air. What happened? Did it freeze? Did it remain liquid and plop into the snow?

Now try taking a pot of boiling water outside and throwing the water into the air. What happened this time? Did it freeze? Does it look like snow in the air?

As explained on LiveScience by Mark Seeley, a climatologist at the University of Minnesota, "When it's cold outside, there's hardly any water vapour present in the air, whereas boiling water emits vapour very readily that's why it's steaming. When you throw the water up in the air, it breaks into much smaller droplets, so there's even more surface for water vapour to come off of."



"Now, cold air is very dense, and this makes its capacity to hold water vapour molecules very low. There's just fundamentally less space for the vapour molecules," Seeley explains. "So, when you throw the boiling water up, suddenly the below-freezing air has more water vapour than it has room for. So,



the vapour precipitates out by clinging to microscopic particles in the air, such as sodium or calcium, and forming crystals. This is just what goes into the formation of snowflakes," Seeley said.