

Fastest way to cool a soda



**ASSIGN
BUSTER**

The fastest way to cool a soda deals a lot with heat transfer. Heat is a measure of the average molecular motion of matter and can be transferred from one piece of matter to another in four different ways which are conduction, convection, evaporation, and radiation. (Tania Dakka) In the experiment the different levels of the independent variable include a cooler with ice, another with ice and water, one with water ice and salt, the refrigerator, and the freezer.

Prior research has been done on this subject by Andrew Olson who has a Ph. D and tested with the refrigerator and freezer. From earlier researchers, facts show that in both the freezer and refrigerator, cold air is removing heat from the room-temperature soda can by convection. Convection is the movement caused within a fluid by the tendency of hotter and therefore less dense material to rise, and colder, denser material to sink under the influence of gravity, which results in transfer of heat. (Weather Questions)

In this experiment, when immersing a can of soda in a cold liquid, it is okay to expect that a much greater number of molecular interactions would result and data would show whether the soda will cool off faster. In the experiment the dependent variable is the the temperature of the soda over different periods of time. We plan on taking the temperature (C) of the soda in each of the different independent variables after 20 minutes, 40 minutes, and 60 minutes.

Also, the salt in the salt water, lowers the freezing point of the water, allowing the ice in the ice bath to melt while still retaining its temperature. (Education) This makes the chilly water in the ice bath even colder. By conducting the experiment the heat should transfer from the soda to one of

the levels of the independent variable and the data should help support convection in hope to learn which one is the fastest way to cool the soda.