



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Nadim Islam</b>	<b>Project Number</b> <b>J0516</b>
<b>Project Title</b> <b>Stop Freezing! Effects of Different Substances on the Freezing Point of Water</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this experiment was to determine the effects of different substances on the freezing point of water (melting point). The freezing point of water is the temperature point at which water changes from a liquid to a solid state. This is also the same as the melting point for pure water. I hypothesized that anything dissolved in water can decrease the freezing point of water. <b>Methods/Materials</b> The substances that were used in this experiment were salt, sugar, vinegar, lemon juice, etc. Different amounts of salt, sugar, flour and baking soda were dissolved in 200 ml. of water and different amounts of milk, vinegar, lemon juice, and alcohol were mixed with water up to 200 ml. I used water without any substances as a control. Finally, I put them in the freezer and checked on them every 10 minutes. The results were recorded on the logbook and computer. <b>Results</b> In my experiment, I saw that salt made the most difference on the freezing point of water. The more salt I added, the more the freezing temperature lowered. I used a control, because I needed something to compare the freezing time of water with salt. Plain water was the best choice because it did not have any foreign substance in it. In this project there was a linear relation between the amount of solid substance (salt, sugar, and baking soda) that is added and the freezing time. <b>Conclusions/Discussion</b> As stated in my hypothesis, I believed that anything dissolved in water decreases the freezing point of water. The experimental data supported my hypothesis, indicating that when you add something into water it always decreases the freezing point. This means that the substances in the water make it freeze slower. Through my experiments, I learned how different substances affect the freezing point of water differently. In addition, I understood the terms #variable and control# much better.	
<b>Summary Statement</b> Different substances have different effects on the freezing point of water.	
<b>Help Received</b> My dad and mom helped me get the materials. Mr. Karatas, my science teacher, taught me how to draw graphs; Used computer classes at Magnolia Science Academy; Ms. George, my English teacher, checked grammar mistakes in the report.	