



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Ruth K. Park	Project Number J1019
Project Title To Chew or Not to Chew	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine if different types of gum has an effect on the temperature of a person's mouth. I believe that chewing different types of gum will increase the temperature of a person's mouth regardless of flavor.</p> <p>Methods/Materials Fifteen volunteers kept their mouths still for five minutes. The temperature before chewing was taken with 15 oral thermometers. The volunteers were split into 3 groups. Group 1 was given 2 pieces of cinnamon-flavored gum. Group 2 was given 2 pieces of mint-flavored gum and group 3 was given no gum. Volunteers chewed for 2 minutes with the beat of a metronome set at a frequency of 144. The temperature was taken after 2 minutes of chewing.</p> <p>Results Mint group, cinnamon group and no gum group all had an increase in temperature. Cinnamon group had the highest change in temperature compare to the other two groups.</p> <p>Conclusions/Discussion I found out from my background research that chewing gum causes the temperature of a person's mouth to rise due to increase in blood flow to the tongue, jaw, and cheek muscles. I also found out that it is just the sensation of being hot or cool and not the temperature of the mouth. I hypothesized that chewing mint gum, cinnamon gum, and no gum will raise the temperature of the mouth regardless of flavor. I conducted the experiment (see methods/material) and got the result (see result). My hypothesis was partially supported because all three groups had some rise in temperature. I did not expect the cinnamon gum group to have most change in temperature. Therefore, I am uncertain as to whether or not the temperature change was due to flavor. Maybe some of the errors I made in the experiment caused the cinnamon group's temperature change to be higher than all the other groups. I learned that no matter what kind of gum you are chewing, the temperature in your mouth still changes and increases. However, due to some of the errors, I do not know for sure if the cinnamon flavor has an affect on a person's mouth. Cinnamon group had the highest change in temperature. I would have to do another experiment without errors to find a definite answer.</p>	
Summary Statement Chewing gum raises the temperature of a person's mouth regardless of gum flavor.	
Help Received Science teacher answered questions; My teacher proofread; Dr. Griffin gave educated guess; My sister helped with graph, typing, and setting up; 15 Volunteers participated in my experiment.	