



# CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

<b>Name(s)</b> Jade C. Wang	<b>Project Number</b>  22881
<b>Project Title</b> Energy Efficiency while Popping Popcorn	
<b>Objectives/Goals</b> My goal was to determine which method of popping popcorn was the most energy-efficient: Jolly Time microwave, Orville Redenbacher's microwave, Jolly Time stove, or Orville Redenbacher's stove. I hypothesized that Orville Redenbacher's stove would be the most energy-efficient. <b>Abstract</b> <b>Methods/Materials</b> I found the energy use of our microwave and stove using Btu, the amount of energy needed to raise one pound of water one degree Fahrenheit by massing a pound of water, then heating it up for a given time. Using both cooking methods, (microwave and stove), I could find the energy use for each. Then, I popped both brands of popcorn using both cooking methods, seeing how long the energy would have to sustain to get the job done. Last, working with the numbers I collected, I found how much energy it took to pop each brand using each cooking method. <b>Results</b> My results showed that using a microwave to pop popcorn is more energy-efficient than a stove. Orville Redenbacher's popcorn uses less energy than Jolly Time. The most energy-efficient popcorn was Orville Redenbacher's popcorn, at 83.9 Btu per bag. Next was Jolly Time microwave at 102.22 Btu per bag, then Orville Redenbacher's stove with 183.37 Btu. Trailing close behind was Jolly Time's stove at 188.7 Btu. My project shows that the most energy-efficient popcorn uses less than 1/2 of the energy the least energy-efficient popcorn uses. <b>Conclusions/Discussion</b> My findings proved that my hypothesis was incorrect. I did, however, attain my objective and discovered which popcorn was the most energy-efficient out of my four choices. The microwave used more energy than the stove per second, but microwaving popcorn was much faster. Orville Redenbacher's popcorn simply popped faster than Jolly Time. The information I gathered from this project expanded at least my knowledge about energy. I learned about Btu and how to measure it. I think that people could use my project's procedure as a basis for testing many different types of food with a variety of cooking methods. By determining the most energy-efficient way to cook a diversity of foods, people will have even more options to save energy.	
<b>Summary Statement</b> My project determined which method of popping popcorn was the most energy-efficient out of four methods.	
<b>Help Received</b> I thank Mr. Labnow and Mr. Newell for answering numerous questions from me, and my family for helping with Excel and eating all that popcorn. Thanks to my friends for all their support.	