



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Morgan D. Nagatani</b>	<b>Project Number</b> <b>J0514</b>
<b>Project Title</b> <b>Energy Nuts</b>	
<b>Objectives/Goals</b> The purpose of this experiment is to discover if various kinds of nuts contain any energy. If the nuts store energy, how much energy does each type of nut contain? This experiment discovers the energy content within peanuts, walnuts, macadamia nuts, cashews, and honey-roasted almonds.	
<b>Abstract</b> I tested small amounts (ten each) of salted peanuts, walnuts, macadamia nuts, cashews, and honey-roasted almonds. Each nut on a sewing needle, which is in the cork, is lit and allowed to burn under the soup can holding the half-cup of water for 2 minutes. I measured the temperature change of the water and calculated the Btu content of each nut.	
<b>Methods/Materials</b> I tested small amounts (ten each) of salted peanuts, walnuts, macadamia nuts, cashews, and honey-roasted almonds. Each nut on a sewing needle, which is in the cork, is lit and allowed to burn under the soup can holding the half-cup of water for 2 minutes. I measured the temperature change of the water and calculated the Btu content of each nut.	
<b>Results</b> The results of my experiment support my hypothesis that peanuts and other nuts contain energy just as the nuts give our bodies nutrition and energy. One way to measure each nut's energy is to test the amount of Btu's or British thermal units stored within the nut. The Webster's Dictionary defines the Btu as "The quantity of heat required to raise the temperature of 1 lb. of water 1 degree Fahrenheit." The nut with the highest stored energy is the walnut with an average 16.7 Btu. Following the walnut is the cashew with an average 13.1 Btu, macadamia nut with an average 10.6 Btu, honey-roasted almond with an average 9.2 Btu, and the salted peanut with an average 8.9 Btu.	
<b>Conclusions/Discussion</b> The purpose of my experiment is to find out if nuts contain any energy. The testing of the nuts I selected show that nuts do contain energy and can be measured in Btu or British thermal units. The experiment's results indicate that of the 5 types of nuts tested, the walnut has the highest amount of stored energy at 16.7 Btu, 13.1 for the cashew, 10.6 Btu for the macadamia nut, 9.2 for the honey-roasted almond, and 8.9 Btu for the salted peanut. Since nuts contain energy, some day we may not only eat them for fun but use nuts to fuel cars and power lights.	
<b>Summary Statement</b> How much energy do various nuts contain?	
<b>Help Received</b> Dad helped with color graphs.	