



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> Emma L. Lauterbach	<b>Project Number</b>  31809
<b>Project Title</b> What's In Fruit? Brix by Brix	
<b>Objectives/Goals</b> The point of my project was to determine if apples ripened in a warmer environment were sweeter than those ripened in a cooler environment. <b>Abstract</b> <b>Methods/Materials</b> Fifteen similar apples were used for comparison of sugar content using a refractometer. Three were measured immediately. The apples were sliced and crushed with a press to extract juice. The juice was placed on the refractometer and held up to the light. Sugar (in brix) was recorded. Remaining twelve apples were distributed (in groups of three) to locations with different air temperatures: 64 degrees, 77 degrees, 38 degrees and 2 degrees Fahrenheit. At seven days, the twelve apples were also sliced, pressed and their sugar content was recorded. <b>Results</b> The apples in the cooler environments had higher sugar content. Apples in the 2 degree environment had the highest sugar content, followed by the 38, 64 and finally the 77 degree environment. <b>Conclusions/Discussion</b> My results contradict my hypothesis, which was that apples in warmer environments would be sweeter. I researched further after finding that the frozen apples were sweeter and found that ice crystals can burst the cells of the fruit, releasing sugar. The frozen apples had a mushy, mealy quality. This is important because grocery stores keep fruit in cold climates before shelving them. This could affect the quality of the fruit we buy.	
<b>Summary Statement</b> Determining if the sugar content in apples ripening in warmer environments is greater than apples ripening in cooler environments.	
<b>Help Received</b> Father helped press apples. Mother helped cut paper for display board and took pictures during the experiment.	