



California Science Center  
**CALIFORNIA STATE SCIENCE FAIR**  
 2001 PROJECT SUMMARY

<b>Your Name</b> (List all student names if multiple authors.) <b>Susan G. Mangan</b>	<b>Science Fair Use Only</b>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>What effect does different amounts of baking soda have on bread?</b>	<b>J0422</b>
<b>Preferred Category</b> (See page 5 for descriptions.) <b>4 - Chemistry</b>	<b>Division</b> <b>J Junior (6-8) J Senior (9-12)</b>
<b>Abstract</b> (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p><b>Objective:</b> My objective was to learn what happens when you change the measurement of baking soda in a bread recipe. When the baking soda was decreased, I believed the bread would be doughy and uncooked. When the baking soda was increased, I believed the bread would be flaky.</p> <p><b>Materials/Method:</b> I used a basic Irish soda bread recipe that used baking soda and cider vinegar for the reaction. The amounts of baking soda were decreased to 1/2 tsp, 1/4 tsp, and none. Then, the baking soda was increased to 1 1/4 tsp, 1 1/2 tsp, 2 tsp, 3 tsp, and 4 tsp to determine what effect it would have on the bread. Each batch of bread was repeated 4 times and measured for height and weight. Control = 1 tsp</p> <p><b>Results:</b> The bread with decreased baking soda was doughy, uncooked, and didn't rise as well. The bread with increased baking soda was flaky, but also didn't rise as well.</p> <p><b>Conclusion:</b> The results supported my hypotheses by having the bread with decreased baking soda not cook completely. Also, the bread with increased baking soda was flaky. My conclusion is that the measurements for the ingredients are important for the proper baking of the bread.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) I changed one leavening ingredient in a bread recipe and measured the changes.	
<b>Help Received in Doing Project</b> (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Mother helped by cutting the papers for the board.	