



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

<b>Your Name</b> (List all student names if multiple authors.) <b>Phoebe B. Park</b>	<b>Science Fair Use Only</b>  <span style="font-size: 2em; font-weight: bold;">S1612</span>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>Smoking Kills: The Effect of Cigarette Smoke on Plants</b>	<b>Division</b> _ Junior (6-8) <u>X</u> Senior (9-12)
<b>Preferred Category</b> (See page 5 for descriptions.) <b>16 - Plant Biology</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>The purpose of this project is to discover what the effects of smoke are on plants. I planned to prepare two identical groups of ten bean plants planted in glass containers. One group of plants was exposed to Virginia Slims cigarettes every other day for three minutes. Then I measured the height and counted the number of leaves each day for approximately two months. I hypothesized that the cigarette smoke would slowly stunt the growth of the plants and the number of leaves would be less than the number of leaves on normal controlled plants.</p> <p>After compiling my data, I found that the average growth in height of the group of plants exposed to smoke was approximately the same compared to the control group of plants. I found the average amount of leaves gained in the smoke-exposed group of plants was much less than the average amount of leaves gained in the control group of plants. I found the leaves exposed to cigarette smoke were weak and shriveled up. The stems of the smoke-exposed plants were much thinner than the stems of the non-exposed plants.</p> <p>When my project was completed, I found that my hypothesis was partially correct. In my exposed plants, fewer new leaves had grown compared to my controls. The height of the plants, however, did not seem to differ much, which contradicted my hypothesis. I believe that the reason the height of plants were similar was because the normal plants had leaves which made the stems make a spiral shape instead of a straight line as the other group of plants did. The group of plants exposed to smoke had less weight of leaves, therefore was much more likely to grow in a straight line. Thus, the difference in the number of leaves between two groups of plants had probably affected the height of plants as well.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) The effect of cigarette smoke on bean plants is equally horrible as its effect on humans.	
<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. My mother took care of the plants while I was gone from home. In the beginning of the experiment, my mom's co-worker, who is a smoker, smoked on my plants.	