



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tanvi V. Gaitonde</b>	<b>Project Number</b> <b>J1714</b>
<b>Project Title</b> <b>Radioaction: Effect of Cell Phone Radiation on Plants</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Objectives/Goals: Which personal device is most harmful from a radiation standpoint for living things?</p> <p>Purpose: Do you ever use your phone or tablet as an alarm? Did you ever think that its radiation was harmful for you? Did you know that scientists are trying to find out if cell radiation causes brain cancer? My experiment is testing the effects of personal device radiation on living things, and identify the most harmful personal device.</p> <p><b>Methods/Materials</b> Materials: Materials used in this project: 6 similar plants, and 5 different personal devices # 1) Android Tablet, 2) iPhone, 3) iPad, 4) Blackberry, and 5) Non-smart cell phone. This device radiation level is published as the Specific Absorption Rate (SAR), measured in watts per kilogram. A cell phone's SAR is a measure of the amount of radio frequency (RF) energy absorbed by the body when using the handset. In the United States, the maximum SAR level must be 1.6 watts per kilogram, in order to be approved for use by the Federal Communication Commission (FCC).</p> <p>Method: I executed this experiment by putting the personal devices close to the plant, monitoring it every day for three weeks, and gathering data about the number of dead flowers and leaves.</p> <p><b>Results</b> At the end of the experiment, I found out that the Android and the Blackberry did the most harm to the plants, followed by the iPhone, then the iPad, and lastly the non-smart phone. All of the devices did some damage to the plants, as compared to the control. The control plant was still strong and healthy, till the end.</p> <p><b>Conclusions/Discussion</b> Even though the Blackberry has one of the lowest SAR levels, it destroyed the plant. Based on my research, the SAR levels of devices keep changing. My conclusion is that, the Blackberry's SAR level would have sustained at a higher level. However, the SAR levels of the other devices like the iPhone or the iPad could have dropped, causing less damage to the plant. This experiment proves how harmful cell radiation can be to living things. I hope people realize that they should put time limits on electronics-for their own health.</p>	
<b>Summary Statement</b> Which personal device is most harmful from a radiation standpoint for living things?	
<b>Help Received</b> My dad helped me with gathering all the devices and charting the data.	