



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Daniel Reyes</b>	<b>Project Number</b> <b>J0520</b>
<b>Project Title</b> <b>Maximizing DNA Isolation</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of my project is to determine a formula and procedure to maximize the isolation of DNA by variation of enzymes, sodium chloride and alcohol concentrations. <b>Methods/Materials</b> DNA was extracted from strawberries using a typical formula and then a process of iteration was conducted in which different concentrations of enzymes, sodium chloride and alcohol were evaluated and measured in order to derive the formula which would maximize the isolation of DNA. <b>Results</b> After testing five unique variations, my final results showed that by changing the amount of enzymes from 1gr to 0.125gr and using 91% concentrated alcohol I was able to maximize the isolation of DNA. My isolated DNA increased from 30% visibility using the typical formula to 60% visibility using my developed formula. <b>Conclusions/Discussion</b> One of the most important steps in my project was the measurement of DNA. I initially measured DNA visibility using naked eye and normal light. In order to increase the accuracy of my measurements I built my own Spectrophotometer which gave me a more accurate image of my DNA from which I was able to measure DNA visibility more accurately and was able to confirm the results of my formula.	
<b>Summary Statement</b> My project successfully developed a procedure and formula for Maximizing the Isolation of DNA by studying the variation of enzymes, sodium chloride and alcohol concentrations.	
<b>Help Received</b> Mother helped type report and keep journal up to date; Dad helped cut the material to build my Spectrophotometer; My uncle Genaro Hernandez gave me friendly advise on how could I measure my extracted DNA.	