



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> Alissa M. Arroyo	<b>Project Number</b> <b>S2101</b>
<b>Project Title</b> <b>How Toxic Is Your Nail Polish?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Based on what research I have conducted, I believe by using nail polishes that contain one of the three chemicals, known as the "toxic-trio", and comparing the results to that of toxin free labeled nail polish, there will be a distinct similarity.</p> <p><b>Methods/Materials</b> When it came to choosing what nail polishes would fit best for the experiment I decided to pick nail polishes that had at least one of the three chemicals from the "toxic-trio." The first nail polish was a Maybelline brand that contained dibutyl phthalate in which I used as the dependent variable. I then placed 1 drop of the Maybelline, Express Finish, nail polish on a square piece of tin foil and set it down in a mason jar along with 3 crickets. I used a cellular device to time the rate at which all crickets died. I repeated each of the following procedures 3 times making sure to wash the Mason jar with soap after every test run. After recording all results and observations, I then proceeded onto the first variable.</p> <p><b>Results</b> The non toxic labeled nail polish ended up being the variable that had the fastest death rate and the concentration variable had the slowest death rate. To test the concentration variable I took general nail polish and added 1 ml of water to test if that would alter the toxicity of the polish.</p> <p><b>Conclusions/Discussion</b> My hypothesis was refuted by my results. As the experiment was in progress, I began comparing the results between trial 1 and trial 2 and noticed the outcomes were not matching up what so ever. I focused on the concentration variable where the results for trial 1 came out to be 15 minutes with 36 seconds and trial 2 came out to be 1 hour 30 minutes and 11 seconds. This huge gap in time tells me that there must have been an error in either my procedure or the materials I used. I used Mason jars as the object in which I would enclose the model organisms. After every variable that was tested, I would wash the Mason jar with soap and water so I can reuse it to test the same variable for a second round. I noted in my observations that some of the crickets that would run to the corners of the glass would get stuck and die. As I was reviewing my results it occurred to me that it#s a possibility the crickets were drowning from the water left in the corners of the Mason jar. Because the crickets drown in any amount of water that is present, the cause of death was drowning and not suffocation of toxins.</p>	
<b>Summary Statement</b> My experiment is about testing whether the use of non-toxic nail polish would have the same toxicity effect as using general nail polish.	
<b>Help Received</b> My cousin helped tranfer crickets into mason jar.	