



**CALIFORNIA STATE SCIENCE FAIR  
2017 PROJECT SUMMARY**

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<b>Project Title</b> <b>Cosmetic Chemistry</b>	
<b>Abstract</b>	
<b>Objectives/Goals</b> The Objectives/Goals for my project were 1) compare the ability of name brand lip balms to homemade lip balms in softening dried apples over a one-week time period & 2) comparing the ability of the 3 types of homemade lip balms, each with a different oil base, in softening dried apples over a one-week time period.	
<b>Methods/Materials</b> Using a recipe I found on the blog Growing-Minds.org, I made homemade lip balms. I modified the recipe by using different types of oils, to compare them to 3 name brand balms & see which would soften dried apples the most over a one week time period. The homemade lip balms were made with beeswax, honey, coconut oil/extra virgin olive oil/canola oil, & a 15 drops of mint essential oil for scent and flavor. The top name brands were all mint "flavored" as well. I spread a thin, even coating of each type of lip balm on store bought dried apples & then recorded each day how soft & flexible the apples got. I repeated the experiment by using four apple pieces of relatively equal size & thickness for each type of lip balm. I used a batch of dried apples with no lip balm as the control group. The homemade balms were all made with the same type & amount of beeswax, honey & essential oil & the same amount of each type of oil. The experiment used the brand of dried apple slices from the same bag. The experiment apples were all covered & kept in the same cool area in my kitchen.	
<b>Results</b> All of the lip balms had an effect on the dried apples. There was no significant softening until Day 4 & several apples slices started to show signs of softening up, except the control batch. By the end of the week, all of the apples except the control batch, had softened. After 7 days, the Blistex apples were the least flexible & the coconut oil apples were the most flexible. The E.O.S. balm & the olive oil balm worked better than the Chapstick & the canola oil balms. One additional observation was that the canola oil & Blistex apples turned brown during the week.	
<b>Conclusions/Discussion</b> My 4 trials showed that the homemade coconut oil lip balm worked the best at softening the dried apples. This supported my hypothesis. However, the name brand E.O.S. lip balm softened the dried apples better than the other two name brand lip balms & better than the canola oil lip balm. These results support making your own lip balm from natural ingredients to get a better softening result than name brand lip balms & it's fun!	
<b>Summary Statement</b> I discovered that homemade lip balm can have a better effect on the softness of dried apples as compared to name brand lip balms over the period of 1 week.	
<b>Help Received</b> This project was my idea. I did my own research and product choices. My mother helped me to set up the double boiler, pour the hot, liquid lip balms into their containers to cool, and helped me cover the display board with contact paper.	