



# CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

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<b>Project Title</b> <b>The Dehydrated Egg</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to determine which types of fluids will hydrate and dehydrate the membrane of an egg. <b>Methods/Materials</b> 3 eggs, vinegar, corn syrup, water, blue food dye, scale, yellow gatorade, 1 can of pepsi, yellow energy drink. Egg shells removed with vinegar soak 24-48hrs, placed 1 egg in corn syrup, placed 1 egg in blue dyed water, 1 egg not put in any fluid and observed for 2 days, then eggs were switched into the fluids and observed for another 2 days. Both eggs then placed in gatorade for 2 days and observed. Both eggs were hydrated and rehydrated again for 2 days then placed in Pepsi for 2 days. Both eggs were hydrated and dehydrated again for 2 days, then placed in yellow energy drink for 2 days. Then all 3 eggs were placed in water for 2 days and observed. <b>Results</b> When the shells were removed with vinegar the egg's membrane was exposed. When Egg 1 was placed in corn syrup, the membrane became shrivled and wrinkly. Egg 2 was not placed in water and was seen to get smaller and the membrane was becoming wrinkly too. Egg 3 was placed in water and the membrane was tight and shiny and the egg grew larger. When the eggs were put in the yellow gatorade the yellow dyed the egg's membrane. It hydrated the dehydrated egg by making grow bigger, but it dehydrated the hydrated egg. Pepsi also dyed the egg's membranes brown and the membranes were becoming weaker. When the eggs were placed in the yellow energy drink, the membranes were fizzing in the fluid and the membranes were starting to crack. Water hydrated the eggs the most and corn syrup dehydrated them the most. <b>Conclusions/Discussion</b> Repeated trials showed that corn syrup dehydrated the eggs the most and water hydrated the eggs the most. I was able to see the process of Osmosis and learned the fluids move in and out of a membrane similar to our blood cells. I learned that water hydrates the membranes but too much call swell a membrane and almost make it burst. I saw the soda and enegry drinks hydrate cells with fluid but destroy the membranes. Water is the best thing, but not too much.	
<b>Summary Statement</b> I showed which fluids dehydrate and hydrate an egg's membrane	
<b>Help Received</b> My parents helped me with weighing the egg's because they were very fragile and I didn't want them to break	