



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Juliana E. Valenzuela	Project Number 34623
Project Title Incredible Jello: Which Additive Makes the Strongest Gelatin?	
Objectives/Goals Many people who are suffering from osteoarthritis, rheumatoid arthritis, and osteoporosis use gelatin to help with their conditions. It also can be used to strengthen bones, joints, and fingernails. Through this project, I will discover the additive that creates the strongest gelatin. Maybe my discovery could help various areas such as medical and agricultural problems. Extracting gelatin from cows could possibly cause diseases. This project might be able to solve these problems. Knowing more about our something such as gelatin can improve our world one step at a time. Gelatin comes from collagen which is what keeps our skin from sagging. Abstract Many people who are suffering from osteoarthritis, rheumatoid arthritis, and osteoporosis use gelatin to help with their conditions. It also can be used to strengthen bones, joints, and fingernails. Through this project, I will discover the additive that creates the strongest gelatin. Maybe my discovery could help various areas such as medical and agricultural problems. Extracting gelatin from cows could possibly cause diseases. This project might be able to solve these problems. Knowing more about our something such as gelatin can improve our world one step at a time. Gelatin comes from collagen which is what keeps our skin from sagging. Methods/Materials Materials: 1. Small paper cups, 2 needed but have extra incase one is broke; 2. Masking tape; 3. Tablespoon; 4. Gelatin-plain ;5. Saucepan; 6. Spoon; 7. Paving Knife; 8. Scissors; 9. Sand paper, or nail file; 10. 20 quarters; 11. Liquid measuring cup, 1 quart size; 12. Lab notebook; 13. 2 measuring cups; 14. Popsicle sticks; 15. Popsicle molds with lid should be separate from the stick portion. Method: I made gelatin and added sugar, salt and milk to the different popsicle molds. Then I tested the strength/thickness of the gelatin by putting a dixie cup and added quarters to see how much weight each gelatin could carry. Results After doing the experiment, I have come to realize that my hypothesis was correct. Sugar was the additive that was able to beat out the other two because of its many traits. Concentration is a factor which helps determine what state the gelatin will be in, and sugar is an additive that is able to harden when concentrated. Also, bacteria are not found in places with a lot of sugar because it is a preservative. For this reason, the bacteria were unable to deposit its own enzyme which would have digested the outside. The average weight the powdered milk was able to hold was 20.79 grams. This additive was unable to create gelatin that was stronger over the other two. For salt, The average weight it was able to withstand was around 29.54 grams. The gelatin made with salt was stronger than the powdered milk but not as sturdy as the sugar. The average weight sugar was able to hold was 40.95 grams. Overall, sugar was the additive that created the sturdiest gelatin.	
Summary Statement I will test what additive will produce the strongest gelatin.	
Help Received my mother helped supervise the boiling water in the kitchen to make the gelatin.	