



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Shania S. Navarro	Project Number J1919
Project Title Which Method Is More Efficient for Plant Growth: Hydroponics or Soil?	
Abstract Objectives/Goals The problem that is being addressed is that many people do not have the money to buy new vegetables every week, so by doing this project, it will help people know which method will be better to reproduce vegetables from table scraps. In addition, with droughts in different states, good soil can become dry and it will be hard to grow a plant in it. This project can help by figuring out which method is better to grow plants. Methods/Materials I used two main methods for my project, which was hydroponics and growing plants in soil. I also used five different vegetables, but I had to double the amount as I was using vegetables for both methods. Growing them in different methods would have affected how the plants turned out. I also put them outside for sunlight every day for a little photosynthesis to increase the growth of the plants. Recording their visual and physical appearance was also mandatory for my results as well as taking pictures of each plant every week. Results At the end of my 6 week timeline, I have concluded that neither method was superior to the other. Growing them hydroponically would cause them to grow faster and had greater plant growth, but they would deteriorate quicker due to overexposure to water. Growing them in soil would cause them to last longer, but they would not grow as quickly. Only when using both methods would you produce a fully efficient plant, able to reproduce. Conclusions/Discussion What I have concluded or accomplished is figuring out which methods of regrowing plants are more efficient for different plants. This will expand our knowledge of plants by what will happen when we use different methods with different plants. We can use new plants and methods to experiment a little more and help those who don't have the money or proper environment to grow or buy new vegetables every week. The importance of this project is to help those in need and learn new things along the way in science.	
Summary Statement My project is about testing which method of growing plants will produce a better plant of efficiency.	
Help Received I didn't receive any help from any labs, but I have received a lot of help from my teachers and parents. They have all improved my project to the greatest. My research I have learned has also helped me on this journey.	