



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

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<b>Project Title</b> Botany Battle: Hydroponics vs. Soil	
<b>Objectives/Goals</b> The purpose of this project is to see which method of plant growth will make plants grow more vigorously and healthy.  My hypothesis is that hydroponically grown plants will grow faster and more vigorously than conventionally grown plants. In my research I have discovered that nutrients are added to the water to aid in hydroponically grown plants. Based on my observations I have determined that this may be a better growing medium than soil, even though soil can be amended and fortified. For the medium to grow plants hydroponically, I am going to use Rockwool. Rockwool is a manufactured mineral fiber, and I think that this will work better than soil because soil can hold diseases and insects, whereas Rockwool will not. <b>Abstract</b>  <b>Methods/Materials</b> Homemade hydroponics terrarium that my dad helped me make. Opaque plastic container with lid, drill, tap water, six pieces of Rockwool, plastic net containers to hold Rockwool (small size), measuring cup, disposable gloves (1 pair), potting mix (1 pound), planting pots, 3 inch (4), hand trowel or scoop, lettuce seeds (1 package), lab notebook and pencil, ruler with millimeter markings, digital scale, paper towels (1 roll), measuring cup, liquid nutrients to add to the water in the hydroponic system (4 ml Flora Micro, 5 ml Flora grow, 1 ml Flora bloom) <b>Results</b> The results for the soil method were not optimal. The average weight, in grams, was 0-1g. As for the average weight, in grams, for the hydroponics method, was 0-2g. The length, in millimeters, for both plants was close, but most of the plant's length for the hydroponics was higher. <b>Conclusions/Discussion</b> In my project, I concluded that the best method to grow healthy and vigorous plants is the hydroponic method. With the information, the plants grown hydroponically grow better than the ones grown with the soil. My soil plants look weaker and thinner, and their leaves aren't that big. My hydroponic plants have big leaves and their roots are a little thicker.	
<b>Summary Statement</b> Hydroponically grown plants will grow faster and more vigorously than conventionally grown plants.	
<b>Help Received</b> My Dad helped me construct a homemade hydroponics terrarium.	