# CALIFORNIA SCIENCE & ENGINEERING FAIR
## 2018 PROJECT SUMMARY

**Name(s)**
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**Project Number**
**J1219**

**Project Title**
## Plants that Change Climate Change

**Abstract**

**Objectives/Goals**
The purpose of this project was to investigate the claim that different plants absorb CO2 at different rates. My hypothesis was that the claim is true and that plants do absorb CO2 with different efficiencies because they have different leaf sizes, leaf pigments, and sensitivities to light.

**Methods/Materials**
I chose 3 different plants for independent variables: a Zonal Geranium, a Senecio Vitalis, and a spider plant. For each experiment, I placed a CO2 meter, which also served as a thermometer and hygrometer, in a 2.5 gallon airtight jar. I put one of the plants inside the jar and sealed it for 24 hours. I noted initial and final humidity, temperature, and CO2 levels inside the jar. I shined a light on the plant from 7:00 a.m. to 7:00 p.m. I cleared the jar between experiments. I tested only soil and the air in the jar as negative controls. The testing was done 3 times per condition.

**Results**
Averaged over the triplicates, the CO2 levels in experiments with only air in the jar dropped by 99.7 parts per million (PPM) from the beginning of the experiment to the end. In the experiments with soil but no plant, they rose by 1515.0 PPM. During the spider plant experiments, CO2 levels rose by 4375.3 PPM. The CO2 levels in the Senecio Vitalis experiments rose by 6810.3 PPM and in the experiments with the Zonal Geranium, they rose by 7285.0 PPM. These very different CO2 levels show that the different plants absorb different amounts of CO2.

**Conclusions/Discussion**
The claim that different plants absorb CO2 at different rates is true, because each plant absorbed a different amount of CO2. It suggests that some plants are better than others for fighting climate change. A good follow-up experiment could be testing which characteristics are responsible for the different rates of CO2 absorption.

**Summary Statement**
I showed that different plant species absorb CO2 at different rates.

**Help Received**
My parents turned on and off the UV lamp when I was not there to do it myself. My teacher helped me organise my project and better understand the scientific method.