



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

Name(s) Sriya Sridhar	Project Number 38401
Project Title Water Works: Setting Up a Wireless System that Monitors the Amount of Moisture in Soil to Conserve Water	
Abstract Objectives/Goals The objective of my study is to accurately measure and monitor the amount of moisture in soil by setting up a wireless system and utilizing this data to conserve water. Methods/Materials Semtech LoRa wireless Gateway, moisture sensor, Windows 7 laptop, 2 potted plants, and a measuring cup to water plants. Measuring the amount of moisture in plant's soil, and comparing it to control variable. Results Based on my measured data, Plant #1 was watered 3725 mL (watered based on sensor values) and Plant #2 was watered 4650 mL (control variable without sensor) total over the course of 16 days. The amount of water that was saved was 925 mL. This amounts to a water conservation of about 24.83%. Conclusions/Discussion Based on the data obtained, I conclude that my results support my engineering goal. My goal was that the moisture sensor needed to detect the moisture levels in the soil and report back to the user through the sensor to the Semtech LoRa Wireless Gateway. This system is to be used to conserve water. The system worked well and the data was received reliably and accurately.	
Summary Statement I setup a wireless system that monitors the amount of moisture in the soil to conserve water.	
Help Received None. I set-up and performed the experiments myself.	