



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Anay Bhakat	Project Number 36320
Project Title A Tool to Effectively Water Plants by Measuring the Soil Moisture	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project is to create a tool that can water plants with the appropriate amount of water thus reducing water wastage and ensuring proper plant growth.</p> <p>Methods/Materials Arduino Uno, Electronic Soil Hygrometer, Electronic Relay, Solenoid Valve, Bread Board</p> <p>Results The experiments showed that we can effectively water plants by measuring soil moisture. A simulation of watering a 150 sq. ft of vegetable patch using this tool taking into account the daily temperature and precipitation of San Francisco for a year predicted about 6000 gallons of water savings.</p> <p>Conclusions/Discussion This tool is a significant improvement over the current timer based drip irrigation techniques. It saves water and ensures proper plant growth.</p>	
Summary Statement I have developed an effective tool to optimize the water given to plants thus reducing water wastage and ensuring proper plant growth.	
Help Received I developed the code for the Arduino Micro Controller based on some tutorials that came with the tool. My Father helped review the code for correctness.	