Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Automatic Water Vol. 2

Finalist's Name: Cuinn Archer

School and City: Mancos Middle School | Mancos, Colorado

Sponsor's Name: Adyan Farrar

Category: Engineering (ENGR)   Division: Junior (6th - 8th grades)

Abstract (250 words or less):

The problem that was the foundation for this project was that the previous device that was made was too big, ugly, expensive, and had a lack of abilities. This project had a total of 9 engineering goals. The first goal was to have it last 10 times without running out of water, the second was to have a light sensor, and the next to add a temperature sensor. The fourth goal was to make it have three plant modes, the next to make it small enough to fit on a window sill, and the next to make the servo mount removable. The last three goals were to make it cost less than $50, to calibrate the sensors to each plant, and to make it pour exactly 75ml of water. For the project, I designed and resin printed the box and other parts, coded the Arduino nano to test multiple different things, and soldered together my final circuit. The results for this project were that eight of the nine goals were met, the only one being the addition of a light sensor. The device watered the plant a total of 10.2 times, the device cost $40 to make, and the values for each plant were 50 for the succulent, 725 for the spider plant, and 800 for the peace lily. As said before, almost all of the goals were met, making this device make plants even healthier.