



Colorado Science and Engineering Fair

2025 Individual Project Abstract Form

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: Screw Water

Finalist's Name: Alex Dicker

School and City: Monte Vista Middle School

Sponsor's Name: Kristi Mathiesen

Category: Engineering

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

The goal of this project was to find the most optimal angle for a modern design of Archimedes Screw to most efficiently pump water. I chose this experiment to see if I could use a modern design of Archimedes Screw to irrigate small farms in the valley. I predicted that the most water would be pumped at the 30 degree angle because it was the shallowest angle that I tested. It turns out that at the angles of 40, 75, and 90 degrees no water got pumped out because it was too steep of an angle. My results showed that no water was pumped from 40, 75, and 90 degrees. The 30 degree angle was the only angle that pumped out water. 30 degrees gave me an average of 773 ml of water per minute, I tested each angle 3 times and then averaged them to get more accurate results. Next year I will be doing a continuation project and I will be making my design much larger and trying to get a permit to get an angled well drilled and I will try to pull water out of the San Luis Valley's aquifer using solar energy.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**