



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: Does the Amount of Soil Compaction Influence Water Drainage

Finalist's Name: Logan Drullinger

School and City: Liberty School, Joes

Sponsor's Name: Linda Fogale

Category: Earth & Environmental Sciences

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

This project's purpose is to determine if the amount of soil compaction influences the water drainage. So basically there were 4 columns constructed on five pounds, eight pounds, and ten pounds. They were pounded down using these weights. Then a stopwatch would be started and every two minutes, one liter of water was poured into the column; moisture probes would be inserted at five inches and fifteen inches. Then they would be removed and taken to the next column. Once all the water had drained the excess water was measured and written down. The process was repeated 3 more times. Then that entire process was repeated for another different type of soil. The results showed that the second type of soil, one with a higher clay content compacted the most and prevented the most water from draining through at a certain amount of time. The first soil most of the water drained through quickly and only compacted in about five inches. The moisture probes would show higher numbers for the lower mark on the first test to indicate that the water was moving through the dirt at a quicker rate than the second soil. Clay is almost like sheets as particles compact easier it is almost like stacking blankets which will eventually be watertight. The first type of soil was mostly silt and sand whose particles are more round. It is like stacking baseball which no matter how many baseballs are stacked are not watertight. This data supports the hypothesis because, the hypothesis stated that the higher the compaction the less water drainage and the more clay in the soil the less water drainage.

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.**