



Colorado Science and Engineering Fair

2025 Team 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: Drones: providing Initial Relief to Disaster Areas

Team Leader's Name: Damian Bencomo

Team Member 1: Damian Bencomo

Team Member 2: Eugene Lucero

School and City: Nettie S. Freed, Pueblo

Sponsor's Name: Michael Bolish

Category: Engineering

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

This project determines if drones can provide initial disaster relief by providing medical supplies like emergency kits, food and water. We built three different frames to test how the drone responds to our controls. We used the square foot tiles on the floor to track distances (10 ft, 20 ft, 30 ft) with 10 trials per distance per frame. Initial and final drop off points were marked on the floor with tape. After attaching battery packs, motors, and propellers, one trial involved piloting the drone forward to land at the drop off point while tracking the time with a stopwatch.

Our hypothesis was supported by our data because our blue frame was the fastest and our green frame was the slowest due to the large weight, surface area, and minimal holes for air flow. Challenges we encountered included both a broken wire and computer chip causing the motor to spin in the opposite direction. We solved this problem by attempting to repair the wire, and eventually ordering a new kit due to the inability to make repairs. In future experiments, we will add load to the drones to determine how additional weight impacts flight speed. Testing load is important because after concluding that the blue frame was the fastest we could decide on an optimal load capacity to ensure that impacted groups of people get enough supplies in a short amount of time..

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

Team Leader's Signature: _____

Date: _____

Team Member 1's Signature: _____

Date: _____

Team Member 2'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 your Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**