



# Colorado Science and Engineering Fair

## 2024 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: Taking a Leap: Does Size Affect Parachute Safety?

Finalist's Name: Alexander Knight

School and City: Corwin International Magnet School, Pueblo

Sponsor's Name: Chuck Moore

Category: Physics & Astronomy (PHYS)

Division: Junior (6th - 8th grades)

Abstract (250 words or less):

The purpose of this project was to find out if a larger parachute could allow a person to land more slowly and therefore more safely. I hypothesized that a bigger parachute will create more drag because of its larger surface area, slowing the fall of the parachute.

The experiment involved creating four parachutes, each of different sizes. Through my research, I decided to make the strings that would hold the payload 1.5 times the length of the various parachute diameters. I then dropped each parachute, with the payload attached, from a height of 3.12 meters. Each parachute was dropped three times, and then an average was calculated from those times.

The data I collected did support my hypothesis because the biggest parachute took the longest to fall to the ground. It took an average of 1.76 seconds to fall. The second biggest parachute fell in an average of 1.65 seconds. The next biggest parachute fell in an average of 1.21 seconds. The smallest parachute took only 0.95 seconds to fall.

These findings lead me to believe that the bigger the parachute, the more drag it will create, and the slower the parachute will fall. Pilots who have bigger parachutes will fall to the ground more slowly when they eject during flight, and this will help to protect their bodies from injury.

*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:

Alexander Knight Date: 3-2-24

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.