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GeoChutes!!!

The purpose of this project was to determine if the design of a parachute (2D or 3D) and the shape of the parachute will affect how long it takes to reach the ground. My hypothesis was that the 3D parachutes will take longer (hang-time) than the 2D parachutes, and the square shape (2D) and cube shape (3D) will have the longest hang-time. Parachute design related to hang-time is important to the military, NASA, and base jumpers.

This experiment involved making eight parachutes. Four were 2D designs (circle, square, rectangle, and triangle) and four were 3D designs (cone, cube, cuboid, and pyramid). My independent variable was the design and shape of the parachutes, and my dependent variable was the amount of hang-time (seconds). All parachutes were dropped from 4.96824 meters and their hang-time was measured in seconds. Also, all parachutes had the same area and all of the 3D parachutes had the same volume.

The experimental results partially supported my hypothesis. The average of the trials for the 3D parachutes had longer hang-time than the 2D parachutes with the exception of the pyramid. These findings conclude that there is a difference between the hang-time of 3D and 2D parachutes, with 3D having the longer hang-time. However, the 2D shape with the longest hang-time was the triangle parachute and the 3D shape with the longest hang-time was the cuboid, not the square and cube parachutes as expected.