Internal memo: Urgent Engineering Project, start ASAP!

As you all well know, you are all employees at an engineering firm, my engineering firm, Hernandez Engineering Unlimited. We just won a job at NASA, and I'm counting on you to make good on what I promised we would deliver. Our firm is to design gravity powered helicopters for surveying the nearby Planet Holloway. Helicopters must weigh less than 100 grams, have no moving parts (it's okay if it bends), and be made entirely of consumable office supplies (NASA is on a bit of a budget these days). Parachutes are too fragile for the harsh Hollowaen atmosphere.

As founder of Hernandez Engineering Unlimited, I am assigning my lead engineers on this project by selecting the teams which design and test the best prototype. In teams of 3, you are to design a prototype gravity copter that will be dropped from a height of 5 feet. Your goal is for your copter to stay in the air as long as possible and to drift as far from the drop point as possible, thereby surveying the maximum amount of Hollowaen atmosphere.

As your boss, I require data for every iteration of your build, and each successive generation after the Generation 0 Prototype I provide you can only change 1 variable at a time. Provide me data for each generation, showing descent time and drift distance. Due to budget constraints and tight deadlines, you are limited to 20 generations, but I require a minimum of 5, and recommend 10. You will be testing the final generation copter in a series of 5 trial runs, with your average descent time and drift distance each contributing to your final results (you may omit 1 data point as an outlier with probable cause).

After your demonstration, I require diagrams of each generation, complete with data tables. I also require a working prototype of your 5th generation copter, including detailed instructions so that NASAs engineers can recreate your design. Make these thorough, any miscommunication will lead to disaster, disgracing the firm and leaving you without a job.

You have two weeks to complete this assignment.

Best of luck.

Your fearless boss,
Mr. Hernandez

PS: The team that does the best on this assignment will represent our firm and be given a handsome bonus at the end of the year.

List of Approved Supplies:

Paper
Cardboard
Tape
Glue
Rubber Bands (not used for potential energy)
Staples
Paperclips
Popsicle Sticks
Post-It notes
Pens
Pencils
Erasers
Aluminum Foil
Wax Paper
Straws
Toothpicks/skewers
String
Magnets
Silly Putty/
Batteries
Zip Ties
Nuts, Bolts, Washers
Flux Capacitors
Paprika

Grading: **40% data and diagrams**
Each iterations data and diagram are worth a combined 20 pts.
40% performance
Aim for at least 5 seconds on your fall time. Based on the results of all the groups, I will determine grade breakdown.
Your goal is to maximize fall time and drift distance.
20% instructions and build quality
If someone who has never seen your copter can build it, you will get 25 pts
If your copter is fully functional with no repairs after your five runs: 25 pts

Total points: **250**

Extra Credit: Top performing team in each class: +20 pts
Second and Third teams in each class: +10 pts
Worst performing team in each class: fired.