Physics in the Universe _____ **Instructor: Barton Clark.**
Sir Francis Drake High School **name here please** **April , 2021**

The Stove project: Part 3. The final report.

This Cook Stove to save the world project has spanned several weeks. Along the way we have examined the driving issues, the physics of the thermodynamics and the engineering principals at play to 'make a better stove'. As a culminating 'deliverable', students will write a 'term paper' on this project, ideally in small groups (but limited to four students per group).

This document 'frames out' what the various sections of the paper should look like.

(Note: the student doesn't have to necessarily follow the order described below, some sections may be combined, for instance, or you may choose to describe things in a different way entirely, just make sure you include all of the following topics in your paper).

Section 1. Describe the problem we are trying to solve. What is the global circumstance that has been driving this project? What are the primary goals of this project?

Section 2: Describe the theories of how 'ideal', complete combustion should work and what happens when the combustion is 'incomplete'? With regard to this stove project, why is 'complete combustion' the ideal? In theory, how can the combustion process itself be improved?

Section 3: Describe the theories of heat transfer, thermal conductivity and specific heat capacity. How do these ideas play into whether or not the stove is more efficient of less.

Section 4: Describe how we ran the experiment (starting with the open, glass Erlenmeyer flask of an open flame, continuing with the 'improved' system (metal soup can nestled into a large, gallon-sized soup can)

Section 5: Have a section which presents the measured values, the mathematic of how we determined the heat captured and how we determined the overall efficiency of the system.

Section 6: Have a section in which you reflect on this project (both in class and as a global project).

Completed the assignment? *(just the minimum or perhaps something more?)*	5	4	3	2	1	0
Clear progression of ideas? *(can a reader easily and clearly follow what you did and why?)*	5	4	3	2	1	0
Accurate science and conclusions (did you achieve the educational goals of the assignment?)	5	4	3	2	1	0
Creativity in writing, layout and use of illustrations? *(how well do you capture the readers interest?)*	5	4	3	2	1	0
Overall professional layout and construction *(i.e. overall craftsmanship of product)*	5	4	3	2	1	0

5 = superior. Teacher is impressed
4 = "good job". (you took 3rd in the race).
3 = you understood the directions and made a minimum effort to comply.
2 -1 = your effort is less than satisfactory

0 = item is absent altogether.

Your score _____(x _2_multiplier) = _____ / **46 pts**.