Designing Solutions Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2nd Semester Project (Due 5/31):**

Your 2nd Semester Project task is to a design solution to a current problem. This means you should not simply be building an item that already exists. Your work should be the culmination of problem solving. Your process should involve multiple iterative cycles of research, brainstorming, design, prototyping, and testing. You should be contributing new ideas, discoveries, or inventions to the prior art, and this contribution should be supported by testing.

Evidence of the following must be in your Inventor’s Notebook. Create a new page for your 2nd Semester Project, and include sub-pages for each of the following. For number 7, you can keep your journal anywhere you want, but find a way to put it in your Inventor’s Notebook by February 22nd. I also plan to conduct periodic journal checks to make sure that you’re making regular entries.

* 1. Define the problem that you are seeking to solve, and describe your general plan for achieving a solution.
	2. Narrow your initial focus. Instead of designing and building the entire object in one try, your first step will be to focus on some crucial aspect of your invention. You could start by designing a mechanical component, an overall housing, or a set of Arduino circuits, sensors, and code. Describe what your first step will entail. What will you be designing and testing in this first stage? Remember that you must have a physical specimen by February 22nd.
	3. Plan your test procedure. Before you begin creating this prototype, think about how you are going to test it. You will be expected to make multiple iterations (at least three in all) of some aspect(s) of your design. How are you going to test your iterations so that you can compare their effectiveness?
	4. Create a detailed sketch of your first prototype. Each of your design processes will be unique. For many of you, it will make sense to begin prototyping a single part or aspect of your project.
	5. Disclose similarities to prior art. If you are getting some of your ideas from prior art, describe and show the sources.
	6. List materials that you will need in order to create a first prototype.  Tell Mr. Stapleton if you need something special that must be ordered.  Keep in mind that we do not have an unlimited budget.
	7. Keep a Long-Term Project Journal. For each class day, beginning today (2/4), you must document your progress in a journal (for each date, include a brief bulleted list of what you have worked on – feel free to add more details if it helps you, but the requirement is only a simple, bulleted list).

These are all of the requirements through February 22nd. Expect additional future requirements to be communicated later.