

## **Thermal Improvement Project**

Planet Holloway Physics

### **Objective:**

To build a model of a product that you have modified or created new that has a better thermal efficiency for a particular need. Your model will be used for reference and to demonstrate several physics concepts that apply to thermodynamics. You will create a 5 minute presentation in which you will attempt to convince “investors” that your product is worth producing and selling. This project is part physics and part marketing.

### **Materials:**

Low cost materials to create a model only. You do not need a working prototype. Try to use materials that will help draw attention to key parts. Use a variety of textures, colors and patterns to highlight how your product is assembled.

### **Write up:**

Research the physics of thermodynamics including but not limited to heat flow, specific heat capacity, R values, and efficiency. Also, do your best to determine the cost of your product, the price you believe it would sell for and what demographic you are marketing the product to. Think about pros and cons of your idea over previous ideas and highlight the pros and discuss why the cons are not major obstacles. Cite your source carefully and use at least three different references for this project. You should hand the panel a short prospectus on your product so they have something to reference and take notes on. Include pictures, data, calculations and any other pertinent information.

### **Presentation:**

This will be the oral presentation portion. You will be allowed 5 minutes to “sell” your idea (product) to the investors. You may use the projector, white board or other classroom tools. You may bring in your own materials. Include photos or illustrations with your explanations where appropriate. Explain your engineering ideas.

Include a section for qualitative and quantitative data about your product. This is the science portion of your presentation, the how it works section. Be sure the investors understand the science behind your product. Be specific, down to the constants and formulas used to determine values.

Good luck and remember that personality, creativity, and showmanship matter a lot in this project.