Epic Quest 2 Grading Rubric

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| Objective | Score | Total |
| Is there a detailed description of the project and its intended goal? | 3 |  |
| Is there an experimental plan that describes what will be measured and how it will be measured? | 3 |  |
| Is there data from temperature sensors? | 3 |  |
| Does the data contain:   * Reference Measurements of outside temperature (3) * High Resolution measurements for a 1 hour period (3) * Low Resolution measurements for a 48 hour period (3) * Touch Measurements for each of the surfaces of the box (3) | 12 |  |
| Are there low resolution graphs of temperature/light vs time for day? | 3 |  |
| Are there a high resolution graphs of temperature/light vs time for an hour? | 3 |  |
| Are there mathematical models of temperature over the course of the day? | 5 |  |
| Are the mathematical models of temperature over the course of the day extended to create models for the temperature over the course of the year? | 5 |  |
| Are there graphs of the temperature as a function of time from the projected data for a year? | 3 |  |
| Are there mathematical models for energy flow in the box from the temperature data? | 5 |  |
| Are there graphs and a table of the energy flow in and out of the box associated with the temperature data over the course of the 47 hour period? | 3 |  |
| Are there graphs of the energy flow in and out of the box over the course of year? | 5 |  |
| Are there mathematical models for the power flow in the box? | 5 |  |
| Are there graphs of the instantaneous power associated with the temperature data over the course of the 24 hour period? | 3 |  |
| Are there graphs of the power flow in the box over the course of year? | 5 |  |
| Is there a 3D representation of the temperature of the walls of the box from the touch temperature data? | 7 |  |
| Is there a conclusion that discusses the following items:   * Total energy incident in the box in a year. (2) * The total cost to keep this box in the comfort range over the course of a year. (2) * The cost to keep an average California home in the comfort range over the course of a year. (2) * Compare this cost to historical data for other homes energy costs. (2) * Data analysis linear regression analysis and addresses the project statement (6) | 14 |  |
| Is there a picture of the box? | 2 |  |
| Documentation honors all instructions, rules of spelling, and grammar. | 3 |  |
| The project shows significant evidence of originality and inventiveness. | 3 |  |
| Clear evidence that higher level thinking skills were used in the creation of this project. | 3 |  |
| References and appendices are included | 2 |  |
| Documentation exceeds expectations | 5 |  |