|  |
| --- |
| Student Name:  Team Members:  Core:  Due Date: |

**MOUSETRAP CAR STEAM CHALLENGE**

I can develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. -[*MS-ETS1-4 Engineering Design*](https://www.nextgenscience.org/pe/ms-ets1-4-engineering-design)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Rubric Categories | **Great**  **10** | **Good**  **8-9** | **Honorable Attempt**  **6-7** | **Incomplete**  **5** |
| **Car Design** | Car travels more than two meters.. | Car travels 1.5 - 2.0 meters | Car travels | Car does not move |
| **Check for Success** | No Errors: spelling, grammar, punctuation, caps & paragraph | Very Few Errors: spelling, grammar, punctuation, caps & paragraph | Some Errors: spelling, grammar, punctuation, caps & paragraph | Too Many Errors |
| **Written Work**  **Accuracy** | All assigned components are complete and accurate | Almost all of the assigned components are complete and accurate | Some of the required components are complete and accurate | Incomplete |
| **Craftsmanship** | All work is done in a proffesional manner | Most work is done in a professional manner | Some aspects of professionalism exist | Improvements needed |
| **Timeliness** | All work is complete and checked in at least two weeks early | All work is complete and turned in at least one week early | All work is complete and turned in by the deadline | Work is turned in late or not at all |

|  |  |
| --- | --- |
| **Grade** |  |

**MOUSETRAP CAR**

**CHALLENGE: HOW CAN YOU BUILD A CAR POWERED BY ONE MOUSTRAP THAT CAN TRAVEL AT LEAST TWO METERS.**

**OVERVIEW AND PURPOSE**

The challenge is to build a car that is powered by a Mousetrap from recycled materials.

**MATERIALS**

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| * One mousetrap * Other teacher approved materials |

**INSERT PLANNING SKETCH BELOW - GOOGLE DRAWING/PHOTO - INCLUDE MATERIALS**

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| --- |
|  |

**MOUSTRAP CAR DATA TABLE: INCLUDE LABELS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Trial #** | **Distance** | **Time** | **Speed** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |

**PHOTO OF MOUSETRAP CAR**

|  |
| --- |
|  |

**REGARDING ITERATION**

|  |  |
| --- | --- |
| Describe all of the changes you made to your design in an attempt to maximize distance traveled. Explain why you made each change. |  |

**RESEARCH/CALCULATIONS**

|  |  |
| --- | --- |
| What is a simple machine? |  |
| What are the six simple machines? |  |
| Which of the simple machines are used in your mousetrap car? |  |
| What is a compound machine? |  |
| Define power. |  |
| Define horsepower. |  |
| How do you find horsepower? |  |
| What is the horsepower of your mousetrap car? Explain the steps that you took to find the horsepower (show your work in words). |  |