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| **Car check**  |
|   | **Excellent****4 pts** | **Good****3 pts** | **Fair****2 pts** | **Poor****1 pts** |  |
| **Car Base**  | ExcellentAll edges are cut neatly and the base is symmetrical.  | Goodmost edges are cut neatly and the base is symmetrical.  | FairSome edges are cut neatly and the base is somewhat symmetrical.  | PoorFew edges are cut neatly and the base is not symmetrical.  |  |
| **Wheel and axle**  | ExcellentAll wheels and axles are balanced and roll with little resistance and travels in a straight line. | GoodAll wheels and axles are somewhat balanced and roll with some resistance  and travels in a slight angle. | FairAll wheels and axles are not very balanced and roll with some resistance causing the car to travels at an angle 100 cm off course before stopping. | PoorAll wheels and axles are not at all balanced and roll with great resistance and touches the wall before stopping. |  |
| **Neatness of assembly**  | ExcellentAll pieces fit together well and appearance is neat.  | GoodMost pieces fit together well but there are some parts with excessive glue or misaligned fasteners.. | FairSome pieces fit together well and there are multiple parts with excessive glue or misaligned fasteners.. . | PoorFew pieces fit together well and there is excess glue or haphazardly assembled..  |  |
| **Built to specifications**  | ExcellentCar built to the specifications matching the plans drawn and submitted in the planning stage. | GoodCar built to most of the specifications the plans drawn and submitted in the planning stage.. Modifications are documented and a reason given for change. | FairCar built to some of the specifications submitted. Not all modifications are documented. | PoorCar built to some of the specifications submitted. No documentation is found about modifications.  |  |
|  |  |  |  |  |  |
| **Successful mousetrap car**  | ExcellentMousetrap car travels a straight line at least 4 meters.  | GoodMousetrap car travels a straight line at least 3 meters.  | FairMousetrap car travels a straight line at least 1 meter. | PoorMousetrap car does not go straight but does reach a 1meter distance.  |  |

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| **Planning** **And** **Design** | Excellent\*sketch is complete and matches the final car\*sketch is missing no labels or measurements | Good\*sketch is mostly complete and matches final car\*sketch is missing no more than two labels or measurements | Fair\*sketch is mostly completed and matches final car\*sketch is missing more than two labels and measurements | Poor\*sketch is incomplete\*sketch does not completely match final car presented\*sketch is missing more than five labels and measurements |

<http://www.wikihow.com/Adapt-a-Mousetrap-Car-for-Distance>

<http://www.pbs.org/saf/1208/teaching/teaching.htm>

<http://ideas-inspire.com/mousetrap-cars/>

<http://scioly.org/wiki/index.php/Mousetrap_Vehicle>

The remaining points will be awarded for completion of a written analysis after the in class performance of your mousetrap car. The analysis will include calculations about the motion of the car made from measurements taken during the performance. **THERE WILL BE A 30 POINT DEDUCTION IF A RATTRAP IS USED!!** There will be also be 3 categories for extra credit in each class period. To be eligible for extra credit there must be no errors in the calculations used to obtain the values.

* Greatest acceleration during the first 2.0 seconds.
* Largest average speed for the whole trip
* Greatest straight line displacement. (distance away from the center line will be subtracted from the maximum displacement measured along the center line.