

Pre-AP Physics Semester Project - Guidelines for Mousetrap Car Construction

Due December 15-16, 2011

- This is an individual project. You must provide all materials and tools. Construction is done off school premises. You may enlist family and friends to help build your project, but you must operate your mousetrap car during its test run.
- You may use only ***one standard, unmodified mousetrap*** as the propulsion force for your car. Your car must transport the mousetrap with the car (mousetrap may not be used to “launch” the car). Cars must be self-starting once released (cars may not be push started). Pulleys, gears, etc. may be used to aid performance, but all the energy must come from one standard mousetrap (rubber bands or other devices cannot be used for additional energy). Rubber bands *may* be used to provide more friction to tires. Your name must be prominently displayed on the car for ease of ownership recognition.
- **Grade will be a function of performance only.** You will receive a daily grade of 100 for a mousetrap car that travels a net distance of 3 meters. Net distance = gross distance – distance from the centerline. For each ½ meter beyond the first three meters, 1 point will be awarded to a test grade for a maximum of 15 points. There will be a target area that your car must hit in order to receive maximum points (approximately 10m from the starting line and 25 cm wide). You will be allotted three trial runs and will receive a grade based on the best run of the three trials.
- Size limitations: length<0.50m (undeployed state), width<0.35m, height<0.15m, mass<0.50kg. A **50% bonus point** reduction will be assessed for cars exceeding the size limitations (you can still receive a 100 for the daily grade). Mousetrap cars built from commercially available kits are strictly prohibited and will not receive any bonus points.
- Observe correct safety procedures as you have fun building, modifying, and presenting your car for evaluation.
- ***This grade can NOT be dropped.*** Notify me at least 2 class periods prior to the launch day if you prefer to complete a research project in lieu of the mousetrap car. The maximum grade of the research project is a daily grade of 100 (*no bonus pts*).

Note – the maximum grade you can receive for a six weeks is 100 and points will **not** carry over to another six weeks.