**Mousetrap Car**

**Overview:**

In this project, students design and construct a vehicle, which uses a single mousetrap as its sole source of propulsion. The vehicle should be designed for distance. In doing so, the students must manipulate simple machines to achieve a reasonable product.

**Limitations:**

Only one mousetrap may be used as the sole source of propulsion.

The spring of the mousetrap may not be altered in any way (This is a safety precaution. Winding the spring tighter can result in the spring breaking.)

The mousetrap must move forward with the vehicle. The mousetrap cannot be used to launch a toy car or other object to the required distance. It must be part of the vehicle.

**The testing procedures:**

Placing the spring of the mousetrap directly above a starting line will test the car. The trap will be released and the car will run until it comes to a complete stop. The distance will be a straight-line measurement from the starting line to the final stopping point of the spring of the mousetrap.

**Objectives:**

The objective of this project is to expose students to concepts of simple machines, forces, and work.

**Timeline:**

The majority of the work should be completed within class time. Two-three class periods will be used to introduce and construct. One to two class periods will be needed to test the devices.

**Materials:**

Construction Materials-The students should supply materials to fit their own design. Some materials you may wish to have are the following:

One mousetrap

String

Rubber bands

Material for axles (dowel rods, thread, lids, --see helpful hints, etc...)

Wheels (lids, compact disks, records, butter tub lids etc...)

**Assessment:**The assessment portion of this project will be based on two items:

1. Quality and originality of design-A small portion of the student's grade should be based on the overall quality of the finished mousetrap car. This will reward students who invest more time in planning, drawing, and building the project.
2. Performance Score-Each student's vehicle will be tested according to the distance traveled. The scale used to assess the student’s performance should reflect the teacher’s individual expectations.

3. Finished lab report with all criteria included.

