



Goal: To be the Mouse Trap Spring Powered Vehicle King or Queen
3rd Quarter Project.

Vehicle Due: (100+ pts) Friday, March 17th, 2006

Paper Due: (50pts) Thursday, March 9th Write about the physics concepts involved in your vehicle:

- Rotational motion
- Rotational Inertia (a.k.a. moment)
- Torque
- Work – simple machines. Identify any simple machines
- Conservation of energy
- Friction
- Etc

2005-2006	Go up 2 meter increasing incline
2004-2005	Go around a circle and "toss a ring"
2003-2004	Race around a circle
2002-2003	Go out 3 meters and launch pencil at target 0.5 meters away
2001-2002	Race 3 meters (Speed)
2000-2001	Go out 5 meters and come back exactly to the starting line
1999-2000	Winner was based on an equation which factored in length of vehicle, mass, and distance traveled
1998-1999	Distance

You are welcome to include sketches and diagrams to clearly explain any concept. Also include how your theme will be incorporated.

Preliminary sketch DUE: (20pts) Friday, March 3rd. Draw a picture (possibly from a couple of perspectives) showing your design and any special features/ideas. Also include your theme idea.

A	Successful 4 th round.
94 B+	Successful 3 rd round (about 10 degrees), makes it into 4 th round
90 B	Makes it into 3 rd round (increasing steepness)
80 C	Full 2 meters on nearly flat
75 D	1 to 2 meters on nearly flat
70 D-	0 to 1 meters. I.e. it must move
69 & below	if it doesn't move or doesn't exist in my presence on the day of the competition.

The better the apparent craftsmanship and **theme** the higher the score.

Theme can earn a maximum of 10 bonus points

10	phenomenal/WOW/ incredibly impressive
7	pretty and original, i.e. creative
5	attractive, unified theme – appropriate and thoughtful
3	legitimate effort and thought went into the theme
1	haphazard effort or it was an afterthought

1 st place in class	+10
2 nd place in class	+5
3 rd place in class	+2

By invitation you may earn additional points after school.

1st place in the school, +20 points; 2nd place, +15 pts; 3rd, +10pts. For participating after school +3.

"To him who has more will be given"

Rules:

1. You must use only **one** *mousetrap spring to power* your vehicle. Rat traps or multiple mousetraps are not allowed. You may want to have a spare. The effectiveness of mousetrap springs wear down over time!
2. This year the competition will be the TASK of going up an incline that increases with each round.
 - Release your vehicle from behind the starting line. You may have two attempts. For the steeper rounds you can start on the ramp.
 - Do not retrieve your vehicle until given permission. If your car doesn't make it completely up the distance will be measured and points will be given accordingly.
 - Each person must construct their own vehicle, i.e. one vehicle per person.
 - 10 points can be earned for decorating your vehicle with an obvious and appropriate theme. E.g. Mary Ann might make her vehicle with a Gilligan's Island theme. To earn these points the creation must demonstrate effort and thought. Have your name and the name of the theme somewhere on the vehicle. Put your name on your vehicle.
 - An exhibition of the top vehicles from each class will occur after school. If successful they will earn additional points.
 - Vehicle must be shorter than 0.5 meters, not including the lever arm.