



MESA DAY CONTEST RULES 2001-2002

Mousetrap Car

- LEVEL:** Senior High School
- TYPE OF CONTEST:** Individual/Team
- COMPOSITION OF TEAM:** 1 - 2 students per team
- NUMBER OF TEAMS:** 5 teams per Center
- SPONSOR:** Robert Heredia, Academic Coordinator, San Diego State University MSP Center
- OVERVIEW:** Students will build a car, powered by a standard size mousetrap, which will travel the longest distance up a 30-degree incline.
- MATERIALS:** One standard mousetrap. All other materials to build the car are legal and optional. Standard safety precautions must be observed.

RULES:

- 1) The Mousetrap Car must be initially powered by the mousetrap mechanism.
- 2) The initial energy may be transferred to another device ONLY if that device does not produce energy by itself.
- 3) **NO** other energy source may be added (e.g. CO₂ cartridge, batteries, elastic strings, rubber bands.) Do not use a flexible arm or shaft attached to the mousetrap in order to store additional energy not provided by the mousetrap.
- 4) The standard mousetrap must be permanently mounted to the chassis. Hardware may be added to the trap, but the original trap hardware and mounting block must not be altered in any way.
- 5) Each car will use only one standard size mousetrap.
- 6) The distance that a car travels will be measured according to the distance the rear wheels travel from the starting line to the furthest point. If the car rolls forward then backwards, the furthest point the car has traveled will still be measured. If any wheel leaves the side of the track, the distance is measured from the starting line to the rear wheel nearest the starting line at the point the car left the track.
- 7) Each car will be allowed 2 runs, 1 run in each round. Everyone will run their Mousetrap Car once during round one and once during round two. Students will be assigned a random number to determine the run order. The greater distance of the two runs will be the recorded distance.
- 8) Students must design and build their **own** Mousetrap Cars.
- 9) Each car must be ready for competition when called.

- 10) Each Mousetrap Car must have a hole through the body of the car so that a string can be easily attached from the bottom of the car in the event of a tie. The location of the hole is left up to the builder(s).
- 11) The Mousetrap Car shall be in a ready, stationary, “hands-off” position prior to the start order from the judge. At this point, the student shall indicate to the judge that the car is in the ready position. If the car moves before the judges say, “go,” the judge will declare a “false start.” Only one false start is allowed per run in the competition. More than one false start disqualifies the car for that run.
- 12) Cars must roll or glide up the track. All wheels must stay in contact with the track at all times.
- 13) No tarpaper or any other material to induce friction is to be used on the track.
- 14) No part of the car may be attached to any part of the track.
- 15) Once the lever has been tripped, no one may touch or otherwise interfere with the car.
- 16) **RAMP SPECIFICATIONS:**
 - The ramp should be a smooth, finished grade of plywood.
 - Recommended ramp size is 4’ wide x 8’ long.

JUDGING:

- 1) Judges will initial cars at the specification check. The same car must be used for both trials. Cars may be repaired or modified between trials. Runs will be **nonconsecutive**.
- 2) In case of a tie, one end of a string equal to the length of the ramp shall be attached to the car through the hole described in RULE #10. The other end of the string shall be attached to a 1-quart sandwich bag (Ziploc type). AA battery masses shall be placed in the bag. Each tiebreaker car shall have the same number of batteries. While the car is in the “ready, stationary” position, the string shall be extended away from the ramp to a “taut” condition. (See RULE #11 for starting procedures). No false starts are allowed in the tiebreaker round. There will be only one tiebreaker round.
- 3) In the event of multiple car false starts, any legal starts will be declared first, second, etc. on the basis of distance traveled. The remainder of the cars that had false starts shall tie for the remainder of the places.

AWARDS: Awards will be given for 1st, 2nd and 3rd place in the following categories:

- 1) **Creativity of Design**
- 2) **Mechanical Design**
- 3) **Distance Traveled Up Incline**

* At Preliminary MESA Day, medals will be awarded in all categories. Only the winners in the Distance Traveled Up Incline category shall advance to Regional MESA Day. Contingent upon available space and security, cars that win Most Creative or Best Mechanical Design at Preliminary MESA Day will be displayed at Regional MESA Day. This determination will be made by the Host Center.

ATTACHMENTS: Official Entry Form

OFFICIAL ENTRY FORM FOR MOUSETRAP CAR CONTEST
Senior High School

Student(s) _____ **Car #** _____

School _____

MESA Center _____

For Judges' Use Only

	Poor										Very Good
Creativity of Design	1	2	3	4	5	6	7	8	9	10	

Mechanical Design	1	2	3	4	5	6	7	8	9	10	
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Trial 1: Degree of Incline _____ Distance Traveled _____

Trial 2: Degree of Incline _____ Distance Traveled _____

Creativity Notes: _____

Mechanical Design Notes: _____

Comments/Judge's Notes: _____

Judges' Names: _____
