

Mousetrap Car

- LEVEL:** Grades 9-12
- TYPE OF CONTEST:** Individual/Team
- COMPOSITION OF TEAMS:** 1-2 students per team
- NUMBER OF TEAMS:** 3 teams per Center
- SPONSOR:** Vonna Hammerschmitt, Director, CSU Fullerton MSP Center
- OVERVIEW:** Students will design and build their own vehicle which must be solely powered by a standard mousetrap and travel up a 30 degree incline. Kits are not allowed.
- MATERIALS:** One standard-sized, single spring mousetrap is required; All other materials to build the vehicle are legal and optional.
- RULES:**
1. Students must design and build their own vehicle which must be solely powered by the mousetrap and activated by tripping the original mousetrap trip mechanism. **Kits will not be allowed.**
 2. NO other energy source may be added. (e.g. CO₂ cartridge, batteries, elastic strings, rubber bands, etc.)
 3. The standard mousetrap must be mounted to the chassis AND must NOT be painted or decorated.
 4. Hardware may be added to the mousetrap, but the original hardware and mounting block may ONLY be altered to attach it to the vehicle. The mousetrap may not be disassembled and then reassembled.
 5. The springs on the mousetrap may NOT be cut, bent, over-wound, heat-treated or altered in any other manner.
 6. No part of the vehicle may be attached to any part of the ramp.
 7. Vehicle must roll or coast along the ramp. All wheels must stay in contact with the surface of the ramp.
 8. The ramp may not be modified.

9. Cars **must** be clearly labeled with student(s)' name, school and MESA Center. Failure to properly label your car will result in 10% point deduction.

JUDGING:

1. Vehicles will be checked for specifications and impounded prior to the performance event. Vehicles will be released for trials but will remain impounded between runs.
2. Vehicles must be in testing condition prior to check-in for vehicle performance. If vehicles are disqualified during specification check, design changes will not be allowed.
3. Each vehicle will be allowed 2 non-consecutive runs.
4. Repairs are only allowed with replacement parts and materials. All repairs must be done in the official repair area and vehicles must be ready when called for the next round.
5. Each vehicle must be ready for competition when called or forfeit that trial.
6. Each vehicle must be in a "ready, stationary, hands-off" position prior to the start order from the judge.
7. "Start" or "Ready Position": Vehicle resting forward of the "Start Block" at the base of the ramp.
8. One team member will be responsible for launch and will indicate to the judge that the vehicle is in the ready position.
9. The team member must wait until the judge gives the "START" order. If the vehicle moves prior to this, a "False Start" will be declared by the judges.
10. Only one "False Start" will be allowed per run. Two "False Starts" during a run attempt disqualifies that run.
11. Students may not touch or interfere with the vehicle once the lever has been tripped.
12. The order of competition will be randomly selected.

AWARDS:

1. Medals will be awarded for 1st, 2nd and 3rd place based on the greatest distance traveled.
2. Ribbons will be awarded for Creativity and Engineering Design.
3. Only teams placing in the distance category will advance to Regional MESA Day.

Appendix:

Ramp Specifications and Recommended Equipment
Judging Guidelines

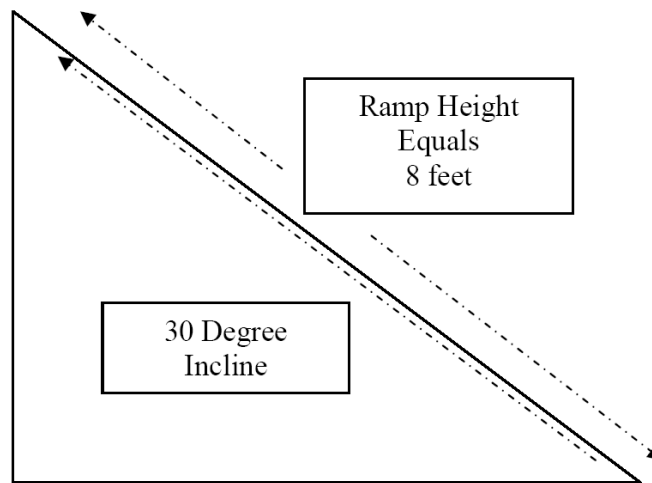
Mousetrap Car Specification Check

- Standard-sized Mousetrap was used
- Mousetrap Car Kit was NOT used
- Car is properly labeled with Student(s) name, school and MESA Center
- Mousetrap was the only energy source used
- Mousetrap has NOT been painted or decorated
- Mousetrap springs have not been modified in any way
- Car is activated by tripping the original mousetrap trip mechanism
- Mousetrap can be “set” and car can sit in a hands-off “ready mode”

APPENDIX

Ramp Specifications and Recommended Equipment

1. 4' x 8' smooth, finish grade plywood, arranged and supported at a 30 degree angle, with a 1"x 2" piece of wood attached to the lower end to establish a "Start Block". If possible a 4' Ramp Extension may be used to allow teams to achieve maximum distance.
2. Recommended Equipment & Supplies: 2 meter measuring tape (craft or sewing style); "Sign Here" post-its for temporary identification of height locations.



Start Block extends entire width of ramp at bottom of ramp

JUDGING GUIDELINES

Measurements:

The distance that a vehicle travels will be measured from starting position of the rear axle to the highest point the rear axle travels up the ramp or leaves the designated ramp area. Measurement will be perpendicular to the starting block located at the base of the ramp.

MOUSETRAP CAR COMPETITION

OFFICIAL SCORING SHEET

NAME	SCHOOL	CENTER	SPEC. CHECK – YES/NO; Give reason for DQ; 10% deduction	1 st RUN	2 nd RUN	10% label deduction