

Mousetrap Car

- LEVEL:** Grades 6-8
- 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 the greatest distance along a specific track. 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.
 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 track.
 7. Vehicle must roll or coast along the track. All wheels must stay in contact with the surface of the track.
 8. The tracks 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. This includes proper labeling of vehicle, 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 with front wheels within the “Start Zone”.
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.
13. Distance traveled will be measured from the front axle to the point where the front axle stops or leaves the designated track area. Measurement will be done perpendicular to the “Start Zone”.

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:

Track Specifications and Recommended Equipment
Judging Guidelines

MESA DAY CONTEST RULES 2009– 2009

Master Set

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Specification Check

- Standard-sized Mousetrap was used
- Mousetrap is 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”
- Car is clearly labeled with: Name, School, Center

APPENDIX

Track Specifications

1. Arranged on a smooth, level floor on non-carpeted area – gymnasium floor is recommended.
2. Track must be 2 meters wide and 10 meters long.
3. Edges must be marked with tape along the length of the track.
4. “Start Zone” is marked with tape 10 cm parallel to “Start Line”.

Recommended Equipment

1. 10 – 30 meter reel-type measuring tape and painters’ tape.
2. Small pieces of masking tape to mark each run. Students write their names on masking tape and judge places tape to mark run. This saves time between runs.

Judging Guidelines

1. Vehicle will be placed with the front wheels within the “Start Zone”.
2. Student(s) will indicate when vehicle is “Set” and in the hands-off ready position.
3. Judge will signal “go” and student will activate vehicle.
4. Spotters will indicate where vehicle stops or leaves the designated track area.

