

# Engineering and Physics of Mousetrap Cars

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**CHECK IN: 8:30 am      CONTEST BEGINS: 9:00 am**

**CLASS:**

Engineering and Physics

**ELIGIBILITY:**

Participation in this contest is limited to 20 teams of up to 3 individuals. Teams will be accepted as applications are received.

**SCOPE OF CONTEST:**

Prior to the contest, students will build a vehicle powered solely by the energy of one standard-sized mousetrap spring. Scoring at the contest will be based on the ability of the vehicle to stop at a specified target.

**Note:** This is an accuracy contest, not a distance contest.

**REGULATIONS:**

1. The device must be powered by a single Victor-brand mousetrap (1 3/4" x 3 7/8") spring.
2. The device cannot have any additional potential or kinetic energy at the start other than what can be stored in the mousetrap's spring itself. (This also means that you cannot push start your vehicle).
3. The spring may be removed from the trap, but its material properties cannot be altered (e.g., no heat treating).
4. The vehicles will be raced on a smooth level surface (hardwood basketball court).
5. The target will be a mark on the surface, made so that the mark does not interfere with the vehicle. The mark will be 20 feet from the starting line. The entire vehicle must start from behind the starting line when released. If the contestant is still in contact with the vehicle when it passes the starting line, the run will not be counted.
6. A team's score for a run will be the horizontal distance from the center of the spring to the target.
7. Each team will be given three attempts. The winner will be that vehicle which has the lowest score on any one of the three attempts.

**EQUIPMENT AND MATERIALS:**

Additional materials may be used in building the vehicle as long as they do not violate regulations 1 or 2 above. For students without prior experience with mousetrap cars, it may be helpful to start with a mousetrap car kit. Kits may be purchased at local hobby supply stores or online.

**TIE BREAKER:**

Any ties will be decided by a single run-off between the vehicles that tied. The shortest time to reach the target may also be used as a tiebreaker, if needed.