Mousetrap Car

This culminating activity will provide all of you the opportunity to design and engineer a car that is powered by a mouse trap. In your groups you will use this car to conduct an experiment and analyze the motion of your vehicle. Additional competition will be held and a winner will be selected based on the car that achieves the greatest displacement.

The project will also include a budgeting plan for selecting materials. Each material will have a specific "cost" associated with it. The idea of a budget is to provide you with the opportunity to realistically problem solve and engineer with financial and resource limits that are often associated with engineering in society.

What are you to do?

THE MOUSETRAP: RE-ENGINEERED

1. Design/Retrofit a mousetrap ergonomically so that it is safe and easy to use if it were to close on your fingers.
2. Use T4T materials to complete the challenge.

An example of an ergonomic re-design is pictured below using a T4T draw string – creative new designs will earn additional points for this portion of the project.

THE CAR!

1. With your team design, sketch, and plan a mousetrap powered vehicle that meets the object of the assignment (within budget & can be powered by a mousetrap to achieve data for experimentation)
2. Build the designed mousetrap car. ***Please note: no pre-purchased cars may be used and assembled for assignment credit; they must be built using materials from the T4T bins.**
3. Keep track of your budgeted materials in a designated sheet of paper (provided)

THE EXPERIMENT/ COMPETITION!

1. Conduct an experiment using video analysis to gather data points to determine the motion of your car.
2. What data will you need to be successful?
    a. Initial & Final position
    b. Total time
    c. Initial & Final velocity
    d. Average velocity
    e. Initial acceleration (the speed up)
    f. Final acceleration (the slow down)
3. **REMEMBER!** Experimentation follows the scientific method. Be certain to include prediction (hypothesis), procedure and data collection (test), analysis, and conclusion.

LAB WRITE-UP!

1. Present your build process and experiment in a well developed lab write up.

Date	Material	Withdrawal	Deposit	Balance
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