

BALLOON CAR ENGINEERING - PRECISION

(INDIVIDUAL ON-SITE COMPETITIVE)

DESCRIPTION:

This event will enable students to demonstrate their ability to engineer a balloon powered vehicle that will travel to the nearest distance of 25 feet.

GENERAL RULES AND REGULATIONS:

- 1.Vehicle can be constructed from any "non-energy " storing materials (provided by the student). Energy storing devices such as rubber bands, mousetraps, springs, etc. are not allowed.
- 2.Vehicles will be powered by a 12" diameter balloon (provided by coordinator) and checked with a 12" paper ring to limit inflation to exactly 12" for all entrants.
- 3.Vehicle will travel on an open track and must provide its own guidance system.
- 4.Vehicle must have a minimum of two wheels and remain in contact with the floor 80% of the distance.
- 5.Distance will be measured from the front axle at starting point to final position of the front axle. (Includes sled vehicle)
- 6.Travel distance for precision is 25 feet.
- 7.Minor alterations will be allowed between attempts.
- 8.Vehicle must be started (triggered) at the starting line. It must be started by balloon power only (no pushing).
- 9.Documentation must be typed or produced electronically. Drawings and sketches can be done by hand.
- 10.Documentation of the problem solving process used in developing the balloon vehicle must be provided to the coordinator.

Basic Problem Solving Steps: (Must accompany project and be done electronically, handwritten not acceptable)

- a. Define the problem
- b. Gather information
- c. Set goals
- d. List solutions
- e. Select the best solution
- f. Apply the best solution
- g. Evaluate

CRITERIA FOR JUDGING:

1. Definition of problem - 5 points
2. Information and Data - 10 points
3. Goal statements- 5 points
4. Written and Sketched solutions - 5 points
5. Written information and sketches of chosen solution - 10 points
6. Evaluation statements - 5 points
7. Vehicle construction and Design - 10 points
8. Precision Ranking- 1st-50 pts, 2nd-45 pts, 3rd-40 pts, 4th-35 pts, 5th-30 pts, etc.

ANY RULES AND REGULATION VIOLATION - (-20 POINTS)

TOTAL POSSIBLE - 100 POINTS

AWARDS IN LEVEL I AND II

