

Leaf-Blower Hovercraft

Purpose: A team of 2 students will build and race a leaf-blower powered hovercraft around a designated course. The length of the race will be two laps around the track, or approximately 328 feet.

Construction: (Must be completely constructed by the students)

Suggestions:

- Build a leaf-blower hovercraft using:
 - . plywood base
 - . leaf blower(s)
 - . thick plastic for bottom of hovercraft “skirt”
 - . assorted staples, screws, bolts and nuts

Mandatory:

- Create and submit a Notebook of the project, documentation will include:
 1. a work log with member contributions denoted (time and materials).
 2. clearly defined sections of project progress.
 3. photographs and/or drawings of different planning stages in project.
 4. Each individual problem may also have specific items required.
 5. A student will be disqualified if he/she does not submit a notebook.

Race Specifics (Ten simple rules for racing a hovercraft)

1. The racecourse will consist of 2 tires or markers approximately 82 feet apart. The length of the race will be two laps or approximately 328 feet.
2. Each team will have a “driver” who sits on the craft and may not directly touch the ground outside the craft. A 5-second penalty is given for each infraction.
3. Each team will have a “pusher” who pushes their team member around the course. They can only push and may not pull.
4. If electricity is needed, each team will need to provide its own electrical cord, as well as developing its own technique for manipulating the cord during the 2-lap race. **Notify your teacher if electricity is needed.**
5. Students may change drivers during the race. The craft must be stopped to exchange drivers. The clock will continue to run during any exchange.
6. The winner of the race will be the team that completes the race course in the shortest period of time.
7. Teams will have 2 runs. Each run is a timed competition. An average of the 2 times will determine placing.

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8. Any hovercraft deemed unsafe will not be allowed to race in the event.
9. Any repairs/adjustments will be done only by the participants of the team.
10. Each group is required to provide safety equipment. (i.e. Helmet, goggles, knee and elbow pads...)

Note: After the completion of the competition all projects must be removed from the Expo Center. An area will be designated outside the Expo fence (near the flag poles) for late pickup of projects on the same day. Students are responsible for moving their projects to this area prior to leaving on the day of competition. Projects in this area will be disposed of if still present the morning following competition. Any projects left in the competition areas will be disposed of by the cleanup crew at the Expo Center immediately following the event. The Angelina County Science & Tech Fair, George H. Henderson, Jr. Exposition Center, and the Lufkin/Angelina County Chamber of Commerce are not responsible for any projects left outside for late pickup.

Scoring

See score sheet for point distribution

Entries will be judged on the following components:

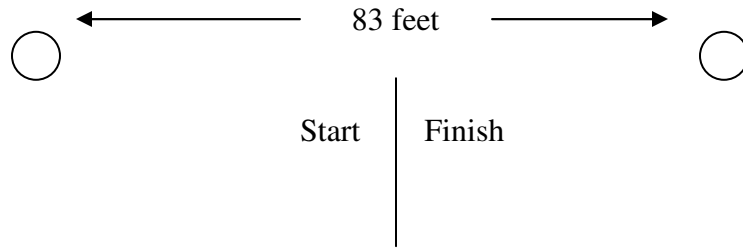
- a. Notebook - 30 pts (See construction section under mandatory)
The notebook shall consist of the following components:
 1. Cover sheet
 2. Scale Drawing
 3. List of materials
 4. Written description of the project

- b. Artistic Design - 30 pts
 1. Exterior decorations
 2. Originality
 3. Overall appearance

- c. Performance (after point deductions)
Placing is based on the (average) lowest (fastest) times
 - 1st place = 40 pts
 - 2nd place = 30 pts
 - 3rd place = 20 pts
 - 4th place = 10 pts
 - 5th and below = no points given

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Race Track



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Hovercraft Score Sheet

Team # _____

Division: _____ Middle School (grades 6-8) Specify grade: _____
 _____ High School (grades 9-12) Specify grade: _____

Names of Students: _____

Name of School: _____

		Point Value	Points Earned	Totals
Student Notebook* (Maximum of 50 pts)	Cover Sheet	0-5		
	Scale Drawing	0-10		
	Materials List	0-5		
	Written description	0-15		
	Oral Presentation	0-15		
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Artistic Design (Maximum of 10 pts)	Exterior Decoration	0-2		
	Originality	0-4		
	Overall Design	0-4		
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Performance (Maximum of 40 pts)	Trial 1 time: _____	Placing points 1- 40 2- 30 3- 20 4- 10 > 5- 0		
	Trial 2 time: _____			
	Overall placing: _____			
	* Pull = disqualified for that trial			
Time Additions	(5 sec each) ground touch-			
<i>*Not submitting a notebook is a disqualifying offense.</i>				Grand Total <input type="text"/>