

Engineering One

Engineering Design, Problem Solving and Surface development Activity

Problem: Design a balloon powered paper dragster that will travel a distance of 15'-0" as fast as possible.

Note: All dragsters must conform to all of the criteria and limitations below.

Limitations

Criteria

Building Materials

1. One sheet of B size "heavy" stock paper for dragster body
2. Two small drinking straws
3. One large drinking straw
4. Four plastic dragster wheels
5. Two 1/8" steel axles
6. Tape - masking or Scotch - any length
7. Glue - white, stick, or hot melt
8. Two test balloons - Four race balloons
9. Three rubber bands
10. Two paper clips

- A. You may only use the supplied materials - No substitutes!
- B. You must have prelim. sketches
- C. You must have a complete multi-view mechanical drawing of body
- D. You must have a complete pattern development drawing before any construction begins
- E. The dragster must be self contained and powered by the balloon only.
- F. The dragster body must be made of paper - from a pattern development
- G. The dragster must be at least 6" in length with no maximum length specified. No width min./max.
- H. The dragster cannot have more than two (completely) vertical sides

Grading criteria

Quality of all drawings
Adherence to limitations & criteria
Quality of constructed vehicle
Application of development knowledge
Functionality

NOTE: Race guidelines will be provided separately and must be strictly adhered to.

Paper Dragster Race!

Official Rules

1. Every racing team is allowed three engines (balloons) for the entire competition!
2. The first dragster to cross the finish line, placed 15 feet away, is declared the winner.
3. Incidental contact between dragsters is considered part of the race.
4. If neither car crosses the finish line the two dragsters will re-race.
On the re-race, if neither car crosses the finish line the dragster that traveled the farthest will be declared the winner.
5. Each dragster is allowed only one false start per race - the 2nd is automatic DQ
6. Each racing team is allowed one minute to prepare their dragster after their race is called. Failure to report in one minute is automatic disqualification (DQ).
7. The Judge declarations are final!
8. Any attempt at a race is considered full participation in that race. Any mechanical or human failure during the setup, start, or during the race is considered to be part of the competition. No re-races due to these incidents.
9. Any human intervention (pushing the dragster, touching it during the race, etc.) is cause for automatic disqualification (DQ).
10. These rules may be modified at anytime as deemed necessary by the *Paper Dragster Racing Commission* (Mr. Laboy).