

Rock (Chalk) the Boat High School Design Competition 2009

Get ready to Rock (Chalk) the Boat! This year's University of Kansas High School Design Competition will challenge students to create a boat that will be tested on its speed and distance capabilities and rewarded for its use of recycled materials. The design competition is meant to inspire and challenge participants and is open to students in ninth through 12th grades. We ask that competitors follow the provided guidelines, be creative and unique, and not violate the spirit of the competition.

The competition focuses on the creation of a small self-propelled raceable boat, with a special emphasis on the use of recycled materials. Teams also must prepare a visual aid presentation that documents several aspects of the boat's design and construction.

Rules, Regulations, Competition & Awards

Rules will be clarified as needed through FAQs added to the High School Design Competition Web page. Contestants should check back often for clarifications. Questions may be sent to Lucy McGilley, lsm@ku.edu.

Students must work in teams of two to four students and must be in ninth through 12th grades.

Boat Regulations

The boats must be no larger than 20 inches long and 10 inches wide including all attachments. There is no height limitation. Boats must be self-propelled and must begin each challenge in a free-floating position. The use of recycled materials (previously used materials) is encouraged. Boats cannot consist of a prefabricated boat shell, but premade propellers may be used. Store bought batteries, motors, and CO₂ canisters will not be allowed. Controlled reactions can be used as long as all byproducts stay contained within the boat. However, if a controlled reaction is used, the team must notify the KU School of Engineering to seek design approval by Monday, Oct. 12.

For the purposes of this competition, a recycled material is defined as a previously used material whose purpose on the boat is different than the purpose it was originally meant for, i.e. using an old coat hanger for the boat frame.

Boat Races (regatta)

Three time trials will be allowed for each team for each of the two boating contests (a straight course and a circular course) in the overall competition. The best distance/time will be used for judging in those contests.

Prior to each challenge, tubs will be provided to ensure the flotation of the boat, but no practice racing will be allowed.

Team members may not aid the propulsion of the boat.

Boats will be allowed to bump the sides of the course while racing. If the boat sinks to the bottom, the clock will stop and the distance will be recorded. Towels will be present if needed.

Other than to prepare the propulsion mechanism, boats may not be modified in between time trials or between the two different competitions.

Straight Race for Speed

Boats will attempt to travel 20 feet in the quickest time possible. The racecourse dimensions are: 20 feet long, 12 inches wide, and 6 inches deep (water depth). There will be 2 feet of waterway staging area prior to the start line and 2 feet past the finish line. Students must stay behind the starting line after the boat takes off. The KU School of Engineering reserves the right to shorten the course if necessary for better competition.

Circular Course for Distance

Boats will also be challenged to travel the farthest distance on a circular course. The circular waterway dimensions are: 6-foot outer diameter and 4-foot inner diameter. Contestants will have 1 minute to complete as many laps as possible without a team member touching their boat. Once the boat stops, the total number of laps will be used to determine distance traveled.

There will be a final round head-to-head competition for both the straight and circular courses. The top three finishers from the preliminary rounds will take part in a single head-to-head competitive race to determine the overall first, second and third place finishers.

Visual Aid Presentation

Each team will be asked to give a visual aid presentation to document their boat's design and construction. The visual aid should outline the use of materials (a list of all materials used should be included), cost of production (recycled materials are considered free), propulsion system, design considerations of the boat and other factors the team considers important. The team members should be prepared to answer questions from judges regarding use of materials and overall design. Also include a material cost summary, as this will be used for judging.

Visual aid presentations will be contained on one standard size "science fair" presentation board and should include the team name, school name and names of each team member.

Awards

In addition to an overall winner being named, recognition will be given in multiple areas of the competition. Teams will be awarded for:

Fastest time on the straight course,
Longest distance traveled on the circular course,
Most innovative design,
Most efficient and effective use of recycled goods

The four categories will each be scored on a 100-point basis. The overall winner will be determined by the highest total scores in all four categories combined.

Good luck Rock Chalking the Boat! The KU School of Engineering looks forward to your participation in the competition.