CNY Steamboat Challenge

**Purpose:** To motivate and encourage youth to pursue Science, Technology, Engineering and Mathematics (STEM) education and careers by demonstrating innovative applications of STEM principles.

**Challengers:** Teams of between two and four Central New York students in grades four through 12. Teams with more than one grade level will compete at the highest grade level.

**Steamboat Requirement:**
1. The steamboats entered into the competition must be made by the entrant students.
2. There is no limit for steamboat team size; however only one steamboat can be entered into the competition per team.
3. The size of the steamboat must be limited to 6" wide and 8" long (from the front to the back).
4. The steamboat must float on water of 3" depth.
5. The steamboat must be designed to be fueled only by a single standard 1.53" diameter tealight candle.

**The Competition:**
1. The steamboat challengers will compete in either junior (grades 4-8) or senior (grade 9-12) levels.
2. All steamboats will be raced in 6" wide and 110" long raingutter regatta inflatable raceways.
3. One standard 1.53" diameter tealight candle must be used as fuel for the steamboat.
4. Challengers should bring their own tools to "prime" the steamboats before each race.
5. Steamboat race monitor will use a utility lighter to light the tealight candle before each race.
6. The tealight candle will be lighted by race monitor at the same time.
7. The starting line of the race is 10" of the end of the raceway.
8. Before each race starts all steamboats must be placed at the end of the raceways with the front of the steamboats blocked at the starting line.
9. After the tealight candles in all racing steamboats are lighted, a maximum of 2 minutes is given for all racing steamboats to generate steam (or start "pop pop"). Races may commence sooner than the 2 minutes only when all racing steamboat individuals or teams agree to.
10. Each race begins at the Competition Judge's start signal "3, 2, 1, Go".
11. No one must touch steamboats once the race starts. Directional control with rudder or other devices should be considered in designs (the rudder size is counted towards the total steamboat length).
12. The first steamboat that touches the other end of the raceway wins. Race monitors will determine and announce each race's winner.
13. A maximum of 2 minutes for each race is allowed after the Competition Judge's "3, 2, 1, Go".
14. Multiple races will be held to score each team's performance.

**Final Challengers will consist of the 1st, 2nd, and 3rd place winners from each level.**

**Team Presentations:**
1. To demonstrate the steamboat DIY process.
2. To present applications of STEM principles.
3. To demonstrate teamwork, collaboration, mentorship, and interactive learning environment.
4. Individual or team presentation shall be no longer than 3 minutes.
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Creativity and Innovation: To demonstrate creative and innovative approaches in making steamboats by using recyclable or salvaged material, or other criteria by judging panel.

Scoring by Steamboat Judging Panel:

1. Up to 80 points in the steamboat competitions.
2. Up to 15 points in individual or team presentations.
3. Up to 5 points in creativity and innovation.

Helpful Resources: Visit http://www.ashraecn.org/Steamboat-Challenge for examples of how to DIY a steamboat or search additional online resources.

Please contact Chonghui Liu Chonghui.Liu@obg.com, ASHRAE CNY Chapter Steamboat Challenge Committee Chair or Leila Karkia Leila.Karkia@obg.com of OBG with any questions.