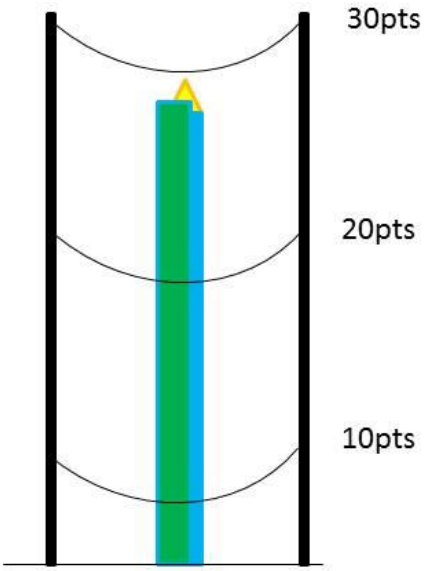
Semester 1 Principals of Engineering Final

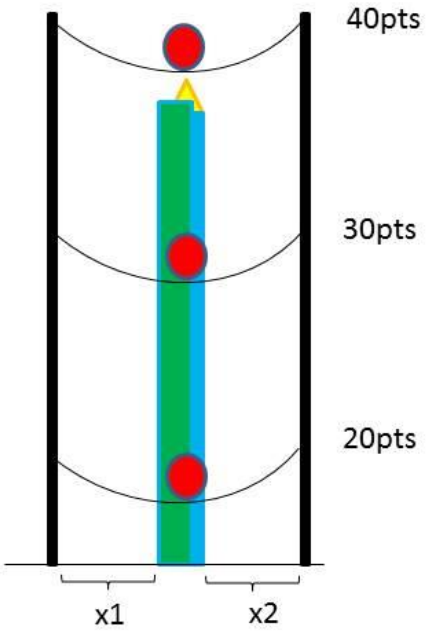
Design a suspension bridge out of recycled materials. The bridge must go through/over the field equipment from the JPL Invention Challenge. The highest score wins.

Details

1) Points are the same as the JPL Invention Challenge for each feature.
2) Any rules related to the playground ball will adopt the JPL rules where appropriate.
3) Your goal is to build a suspension bridge that has a mid-point (without touching) the 18 (see figure).
4) The bonus points are awarded for a ball being able to travel half the length of the bridge and resting at the mid-point without the bridge or ball touching the 18.
5) The design must specify which of the three bridges to make (through upper hole, lower hole, or over top of flame).
6) Design must specify span as a specified distance.
7) Teams will be selected by Mr. Neat
8) The recycled materials are limited to:
    a. any plastic recyclable container
    b. any 12 oz aluminum recyclable container
    c. newspaper
    d. string
    e. cardboard
9) Wood glue is the only allowed adhesive
10) Mr. Neat will provide wood glue and recycled materials as available
11) Each team will be made up of two teams
    a. Design team
    b. Build team
12) Teams will have Monday, Tuesday, and Wednesday to design the bridge. The design team product is a PowerPoint and a sketchup model.
13) Teams will have Thursday, Friday and Monday to build the bridges.
14) The competition will be held during the final exam period.
15) In order to pass the class and be awarded the "A" if your team wins, you must post pdf's of both completed PowerPoints (the bridge you designed and the one you built) on your website.
16) Entries will be DQ'd if the design doesn't match the actual bridge.
17) Span will be used for tie breakers.

Good Luck!





side views

span = 2*min(x1, x2)