

5th Annual Chippewa County 4-H Engineering Challenge

The **Chippewa County 4-H Engineering Challenge** is back!!! We will again be testing your skills for the **bridge building**. Also this year we will be testing your skills and ideas to build a **wind powered car** and new this year is the **bottle powered car**! This a self-guided contest that is open to all 4-H members.



Bridge Building:



Competitors will be given 12- 1/8" x 1/8" x 36" balsa wood strips to build a bridge that will span an 15.5" distance and be no longer than 16". The width can be no more than 4", with a height of no more than 6". The bridge must have a place that a 3"x3" steel plate can sit, in which the weight will be hung from. The only building material to be used will be the supplied wood strips. The only fastening of strips will be glue of your own choosing. The winner will be the bridge that holds the most weight before collaps-

Sail Car:

Competitors will need to build a car that will be powered by paper sail. The sail will be the standard 8.5" x 11" 20 weight paper. The sail must be it's only source of power, no other forms of stored energy can be used. Paper will be provided the day of the challenge to ensure all cars will be using the same size and weight of paper. The car will be placed in front of a 20" box fan, once the fan is turned on, the fan will stay on until the car quits moving. The competitor who's car makes it the furthest is the winner.



Bottle Car:



Competitors will need to supply their own 2 liter soda bottles... I recommend root beer bottles because it is an excuse to have root beer floats! The bottle will be pressurized to 40 psi of air (no water can be added) using a bicycle tire pump, and then realized. No other forms of stored energy can be used. There will be two styles of releases offered, and you are free to choose which one you would like to build with. It will be either just an open bottle or have a type "M" male coupler attached. Hint: I have found that a 1/2" PVC fits nice into the neck of the bottle... using a 1/2" PVC cap, I drilled and tapped it to 3/8" NPT, used a pipe bushing to 1/4" NPT, an air coupler screws right in. (Menards # 6896962 PVC plug, 6857215 pipe bushing, and 2073314 male air coupler). If you are unsure what to get, and would like me to supply this set up, I will certainly do that. The competitor is free to design their own bottle release as well, as long as it works, and can be pumped up using the standard Schrader (automotive) valve. The competitor who's car makes it the furthest is the winner.

The competition will be held at the **Teen's Volleyball Tournament March 15th at 1:00 in Chippewa Falls Middle School**. Cost is \$10.00 including the bridge building supplies. Supplies can be purchased direct from Scott Hansen or they are also available at the Extension Office. For more information, a complete set of rules, or if you would like me to visit your club, please contact Scott Hansen at 715-568-4260 or pizzacutter4x4@hotmail.com

Good luck, plan well, and have fun!

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