Alternative Energy-Wind Turbine

OBJECTIVE: The objective is to build a Wind Turbine Fan that will generate the highest voltage.

PROCEDURES: Students should submit the completed fan on the during check-in at Reaves Arena at the Georgia national Fair.
During turn in, you will sign up for a time to return setup and test your blade system
A copy of the online registration confirmation will be required to check-in for competition.
CONTEST RULES:
1. All exhibitors are required to read and abide by the Georgia National Fair General Rules and Regulations found
at http://www.georgianationalfair.com/youth-educational-exhibits/. Once the page opens scroll down to the Information
tab and click on Youth Educational Exhibits General Rules. PLEASE NOTE: IT IS YOUR RESPONSIBILITY TO READ AND
UNDERSTAND THE RULES. If you have questions, you may certainly e-mail us at sprice@gatsa.org or contests@gnfa.
com. Please help us prevent entry disqualifications.
Stand Height: 24 in (must use stand with gear box system provided by GaTSA)
Maximum blade diameter: 36 in

Maximum number of blades: 12

MATERIALS:

* KidWind Wind Turbine Hub - Part # KW-WTH3 -
	+ Part Url is:<http://www.vernier.com/products/kidwind/wind-energy/kw-wth3/>
* Any materials may be used for blades and must be attached by dowel to the hub
* Dowel material is student choice

TESTING:

* Students will attach their hub and blade system to the provided KidWind Stand and Gear System. Only the approved Kidwind Hub will be used. Part Url is:<http://www.vernier.com/products/kidwind/wind-energy/kw-wth3/>
* 4 Box fans will be used to create a wind tunnel (2 fans on bottom with 2 fans on top). Wind tunnel will be 48inx48inx48in cube open on the back

EVALUATION:

* Voltage will be measured using a multimeter attached to the generator leads
* Students will have three opportunities and the three voltages will be averaged.
* Award places determined by voltage ranking
* Ties will be broken by testing efficiency of the wind turbine