

WS/FC Schools
Go GREEN GO-KART COMPETITION
May 20, 2009



“In the end, nobody wins unless everybody wins.”

Greetings Alternative Fuel Racers!

We want to HELP you for FREE! If you are building a go-kart to race in the competition in May, but are having design, or construction, problems, then maybe we can lend a hand. Though this is a competition, it is a friendly one, and we will be glad to help you find materials, motors, fuels, batteries, etc. We can also cut metal for you, weld, do some machining, and more!

You are responsible for any costs for material incurred, but any advice, or labor we give you is FREE.

Contact:

Kai Ehnes: ktehnes@wsfcs.k12.nc.us

Or

Bill Longyard: whlongyard@wsfcs.k12.nc.us

How to Start:

1. Get your principal's approval.
2. Organize your club, or classroom.
3. Decide on sourcing method: Donations, fund-raising, etc.
4. Find an old go-kart (or build one from scratch!) If you have enough funds, you can even just buy a new one (Tractor Supply, Northern Tools, eBay, etc.)
5. Decide your power source. Currently, these are the options:
 - a. Electric (battery powered electric motors)
 - b. Solar (solar panels driving an electric motor).

- c. gas engine converted to Ethanol (usually requires nothing more than drilling out carburetor jets one or two sizes larger. (Very small drill bit kits are available at Harbor Freight tools for only about \$10.)
 - d. biodiesel (must be at least 50/50 blend.)
 - e. WVO, waste vegetable oil (sometimes called french fry grease).
 - f. Vegetable oil (corn, peanut, etc.)
 - g. We are investigating others, but a compressed gas, such as propane, hydrogen, etc, are NOT allowed. NO pressure vessels will be allowed on karts.
6. Build, or reconfigure, your vehicle and powerplant. STUDENTS should be actively involved in the DESIGN and CONSTRUCTION.
 7. Make sure your design is safe. SAFETY REQUIREMENTS WILL BE POSTED ON THIS WEB PAGE in the near future. DOT approved HELMETS are required for all drivers. Other safety devices may also be required, but if so, will be provided. A pre-race safety inspection is mandatory.
 8. Practice driving. The race course will have left and right turns, straight aways, as well as chicanes. The distance of the course is tentatively set at approximately 300 yards. It will be on tarmac.

Design Hints:

1. KEEP IT SIMPLE: Simple designs are easy to build, keep running, and repair during the heat of a competition.
2. KEEP IT LIGHT: Low powered machines have less trouble pushing lightweight vehicles. Brakes work better when they have less rolling mass to slow down.
3. KEEP IT SAFE: Make sure you use quality materials and quality construction methods in building your kart.
4. KEEP IT FUN: Everyone on your racing team should enjoy the process. Collaboration and learning is the goal. We want to have a great race day, and participating is considered winning!

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