

Bayfield Team Electrathon

Electric Vehicle Design and Planning

Materials:

overhead projector
large roll of paper 3' wide
pencils
markers
colored paper
large compass(chalk board type)
scissors
full face helmet
tape

Procedure:

1. set up a small piece of plywood for a seat on a concrete block or other similar material and have a medium sized student lay down on the plywood in the racers position. If you have a full faced helmet put it on the driver. Remember the driver should be laying down but still have visibility.
2. The should driver simulate a driving position. Experiment with different angles of recline. When one position seems better than the others, turn on the over head projector. Position it so driver is full size. If the projector is too far from the driver you will have made an enlarger, unless you are planning on the driver growing a lot this is not desirable. Once you are satisfied with the shadow and position of the driver. Trace the driver
3. Most electrathon races require a roll bar that is at least 2" over the drivers head. Sketch in the roll bar so its at least 3" for a fudge factor. Keep it close to the drivers head and back
4. Cut out of colored paper the following components

20" wheels (or other dia. of your choice)

motor

battery box

5. tape the components in the place you think they should go. The motor and battery box should be below the axle line. The driver should be at least 3' off the ground line (bottom of the tires)

6. move the components around to achieve the design you think would work. Discuss the reasons you put each component where you did.

7. Use a light line to draw the out line of the shell. Now is the time to decide if you want an open cockpit (simpler) or an enclosed cockpit with a wind shield (more aerodynamic)