

How to Build a Hovercraft

(or "What to do with all that free time I have on my hands")

Purpose: To construct, or have students construct, a working hovercraft that is capable of transporting several students atop a cushion of air.

Materials Needed: One 4' x 8' hunk of plywood, one roll of 1 mil clear plastic "painter's" drop cloth, one large roll duct tape, one nut & bolt no longer than 1/2 inch longer than thickness of plywood, one plastic coffee can lid, one air supply – top blower from an old ShopVac does fine.

Procedure:

1. Cut the plywood into a circle. Make a 4' diameter for a full size hovercraft and a 2' radius for a "mini"/ personal sized. The 2' size allows the construction of two crafts per sheet of plywood.
2. Drill two holes. 1st hole is in center of disc to accommodate the bolt. Drill size accordingly. 2nd hole is to match the hose from the air supply. Use a hole boring drill to just match the diameter of the hose to insert later.
3. Use duct tape to cover any really bad imperfections in the wood itself so a splinter won't tear the plastic later.
4. Cover one side of the disc with the plastic sheeting so that there is several inches overlapping to wrap around to the other side. Use a ton of duct tape to attach the plastic to the other side (top) of the disc. Use copious amounts the duct tape to insure a good air seal. It will take roughly 3-4 inches to border properly.
5. Add one layer of duct tape all around the circumference of the disc to create a bumper and protective cover for future collisions.
6. Drill or punch a hole in the plastic coffee can lid to match the diameter of the bolt. Place plastic coffee can lid in center of bottom of disc. This is to anchor the plastic to the center. Secure lid with the bolt and tighten. Make sure the bolt protrudes thru the top side and not the bottom side. Cover lid area with a layer of duct tape.
7. Cut about eight 1" diameter holes in the plastic forming a circle of holes about one foot in radius from the center. These are the exit holes for the air. It's a good idea to place a strip of duct tape over the area where you are going to cut the hole first. This way the tape acts as a sealer and you won't have to worry about the plastic fraying. Cut the holes right thru the tape and plastic.
8. Turn over so plastic is down. Place hose end into inlet hole and go for a ride! The hose can be fitted better with a little duct tape on the end as a sealer.
9. As use causes small tears in the plastic, just duct it!

