

Hovercraft of Physics

Before your group can build its **hovercraft**, you must plan what and how you will build your craft. Most things in the real world start as concepts on a piece of paper; this is where your group will start its hovercraft. Things you will need to consider before you start building are listed below:

- Where to get information on how to build your craft?
- What forces are acting on your craft? (Free body diagram)
- What your craft will look like? (Dimensions and appearance)
- The materials you will need to build a craft that works. How to put it together?
- How will you test your design?
- Blueprints

Everyone can work on all aspects of the design (divide work as equally as possible)

All People in the Group (3 Maximum) – Everyone in your group is responsible for doing research (on the Internet & books) and completing the blueprints. Everyone in the group should help in gathering materials, designing, constructing, and testing your craft.

Research

Your group should go on the Internet to find information on hovercrafts (if you find a good site please e-mail it to me for extra credit). Your group should use other resources (textbook, books from library, books in the class, parents, etc.) to get important information that will help you build the craft and increase your understanding of the physics involved.

Concept Design (Blueprints) - A drawing of what the hovercraft might look like (side view or birds-eye view (top view)). Your group will select 10 vocabulary words to include in your blueprints. Arrows should be drawn showing where each concept should be explained and the physics behind the concepts. You should address concepts such as: friction, acceleration, Newton's Laws of Motion and any other forces or physics that affect the movement of the hovercraft. The use of a professional reference manual (your textbook or other science books in the room) will assist you in explaining "**What Is Going On**" in your blueprints.

Approval of Concept Design (Blueprints)

When your group has addressed the items above and has the **blueprints** completed, you need to get it approve and signed (**for points**) by Mr. Mathot. Once I have approved your design, you may sign up for your presentation date and start building your craft. **Good Luck!**

Forces (Free Body) Diagram- Make sure you include a **FINAL DESIGN VERSION (Free Body Diagram)** in the packet you turn in on your presentation day. (*See grade sheet*)

Grading

In the real world, it is how your product performs that ultimately matters the most. If your product is weak in design, construction, concept or performance it will not do well in the market place. Another important item is being able to explain how it works and why people should invest large sums of money to purchase your craft. See the **GRADE SHEET** for more info on grading and requirements.