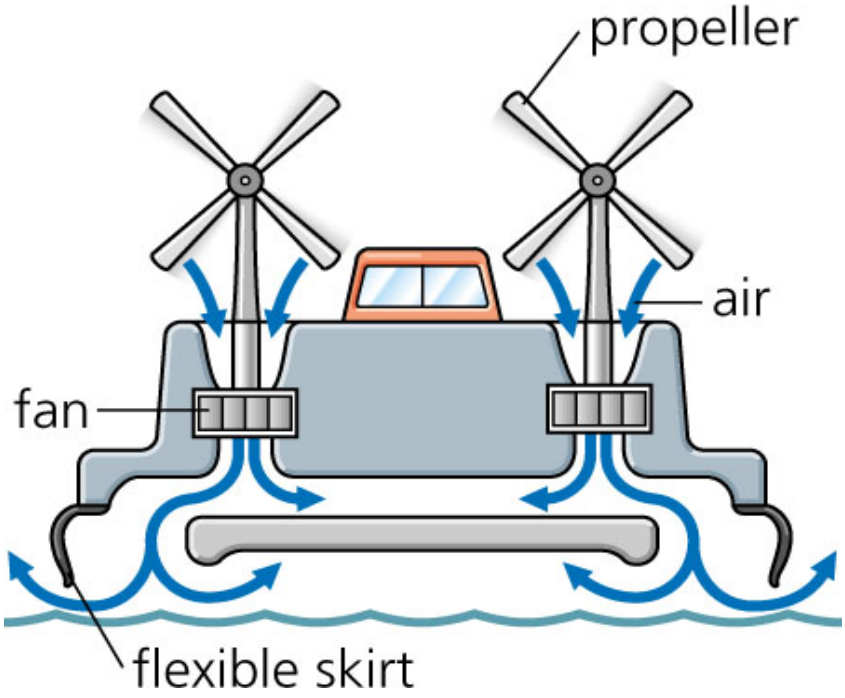
Name:

All About Hovercrafts (Teacher Version)

Hovercraft Anatomy

Label the different parts of a Hovercraft:

- Fan
- Propeller
- Air
- Flexible Skirt



Before Building

1. Why is it easier to run through air instead of water?
*Even the best swimmers are slowed down because water has more **drag**. Water resistance is higher than air resistance because it is a liquid.*

2. Why are boats and airplanes shaped the way they are? Do we see this design in nature?
Engineers have designed boats and airplanes to be the shapes they are to reduce friction. Fish and birds have shapes which reduce resistance as well.

3. Are there situations you can think of where air and water resistance are helpful? *Answers will vary. Sky divers need air resistance to fill out their parachutes.*

4. Do you think hovercrafts work better on land or on water? Explain your thinking to a friend, and then write down your answer.
Answers will depend on their building design and how they test their own. There shouldn't be much of a difference.

Source: Hauser, Jill. Gizmos & Gadgets. Charlotte: Williamson Publishing Co., 1999. Print.

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Let's Build a Hovercraft!

Materials:

- Sticky tack
- CD's or light circular trays
- Painter's tape
- Snappy Caps™ or funnels
- Toothpick
- Balloon or hairdryer

Instructions:

1. Stretch a piece of sticky tack out and circle it around the centre of the CD.

2. Cover the top of the Snappy Cap™ with Painter's tape or masking tape.

3. Poke any number of holes in the tape using a toothpick.

4. Attach the cap to the sticky tack on the CD, pushing the tack in so there are no holes.

5. Blow up the balloon, twist, and fasten to the Snappy Cap™. Untwist the balloon and let it slide on a smooth surface.

Questions to Consider...

- What design made the best hovercraft?
- Can it work across a tub of still water?
- How is a hovercraft different from a ship? Which is more advantageous?
- Explain in a sentence or two how your hovercraft works.
- Does your hovercraft have all the parts from the diagram on the first page?

Extension:

Did you know you could build your own, rideable Hovercraft?
Check out the following website, and make it a class project!
http://www.sciencebuddies.org/science-fair-projects/project_ideas/Aero_p036.shtml#summary

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Image Sources:

Hovercraft Anatomy:

1. Inventions: http://americaninvetors.blogspot.ca/2009/07/hovercraft.html

Before Building:

1. Religious Travel International: http://www.rtijourneys.com/travelresources/
2. Sipadan: http://www.sipadan.org/fish-group-sipadan.php
3. Northeast Wilderness Trust: http://www.newildernesstrust.org/2013/04/15/wild-connected-series-bird-language/

Let's Build a Hovercraft!

1. MiniEco: http://www.minieco.co.uk/quick-craft-balloon-hovercraft/
2. All other images are property of Joelle Lawson.