

# Salt Wedgie

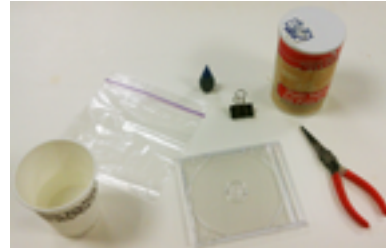
Make a jewel of a case for density differences

Introduction:

By using a CD/DVD case and a plastic bag, one can show the differences in density and effects of salt water.

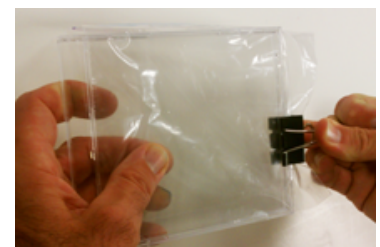
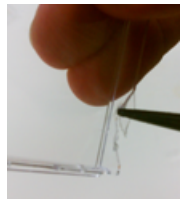
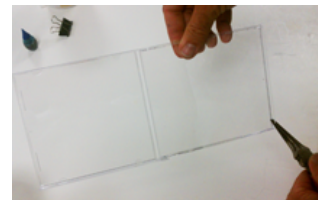
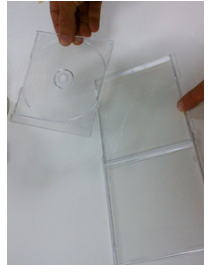
## Materials:

- An empty CD or DVD case (jewel case)
- A 1 quart re-sealable baggy (zip-lock type)
- Scissors or pliers
- Cups
- Salt
- Water
- Food coloring
- Binder clip (optional)



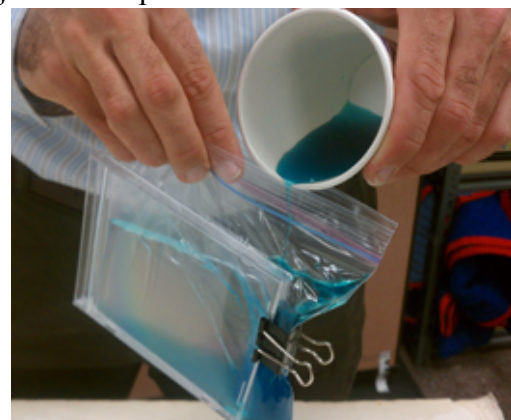
## Assembly:

1. Open a CD or DVD case (jewel case) and remove the plastic disc holder.
2. Break off one or more small pieces from the jewel case door, the side furthest from hinge (as shown on right). This will allow faster fluid flows when doing your activity.
3. Place a 1-quart plastic baggy into the jewel case. Place the baggy's sealed corner into the corner of the jewel case. Lay the bag flat so that when closed, the majority of the baggy rests inside the jewel case. When held up right, a small portion of the baggy should rest outside of the jewel case, opposite the hinged side. Also, the re-sealable baggy opening should be outside and on top of the case (see image to the right).
4. The jewel case should add structure to the baggy, allowing easy viewing of your fluids. However, to help ensure a more pleasurable and drip-free experience, placing a binder clip on the door portion of the jewel case will help hold your device together. Don't push the binder clip too close to the jewel case. This extra space will act as a fluid reservoir.
5. Make a salt solution in a cup. Add salt until it no longer dissolves. Add a few drops of food coloring for contrast.



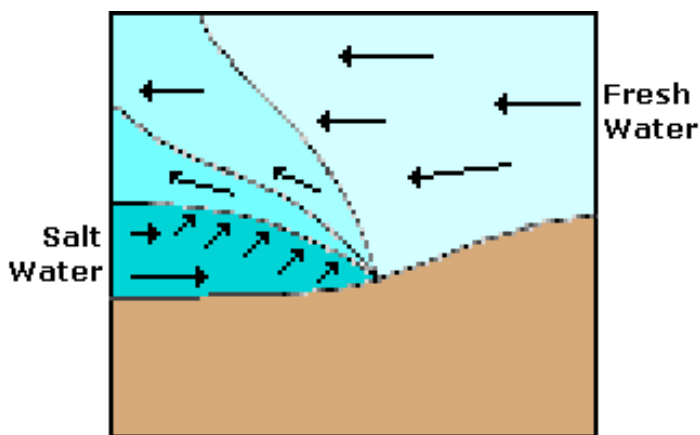
To do and notice:

1. Open the baggy and slowly pour some tap water into it. The water should run into the portion of the baggy encased in the jewel case. Pour water until the case is about  $\frac{1}{2}$  full of water.
2. Very slowly pour your colored salt-water solution in to the portion of the baggy that resides outside of the jewel case (on the side). This will allow the salt-water solution to slowly flow into the jewel case portion of the baggy.
3. Observe what happens to the colored salt water and tap water.



What's going on?

Tap water or fresh water is less dense than salt water. This difference in density allows salt water to flow underneath the fresh water. As the salt water flows in, it initially forms a wedge. Wedges are very common where fresh water meets salt water such in an estuary like San Francisco Bay.



From: <http://omp.gso.uri.edu/ompweb/doee/science/descript/saltwedg.htm>

Credits:

Thanks to Bryce Johnson for his generous support, donation of time and his hands. Check out his nice shirt too!!!

