



Experiment with Water!

3rd-6th grade

Drops on a Penny

Materials: penny, eye dropper, water

Predict: How many drops of water will fit on the surface of a penny?

- Use an eye dropper to add one drop of water at a time to the surface of the penny.
- How many drops can you add before the water spills off the edge of the penny?
- How does your final number compare to your prediction? Were you surprised?



Have you ever seen small insects that skate across the surface of a pond or stream? They are travelling on the “skin” or “film” of the water.

- This film is **surface tension** -- a phenomenon that is due to the attraction water molecules have to each other. The water molecules at the surface that don't have other water molecules all around them, “cling” or cohere more strongly to the ones they are in contact with.
- Experiment with surface tension. Try setting small metal objects, like a paperclip, that would normally sink, gently on the surface of water.

Ocean in a Bottle

Materials: soda bottle with cap, blue food coloring, vegetable or mineral oil, glue gun

Create your own waves in a bottle

- Fill the bottle 2/3 with water and add a couple of drops of food coloring. Put the top on and shake it up.
- Remove the cap and add enough oil to fill the bottle.
- Use the glue gun to seal the cap on the bottle so it doesn't leak.
- Hold the bottle on its side and move it back and forth to create waves. Try to make different sized waves.





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Density of Water

Materials: large clear container, small clear container with lid, food coloring, salt water, fresh water

Density is the amount of mass an object or substance has versus its volume. Think about a lunch bag filled with feather vs. a lunch bag filled with pebbles. The bag with pebbles is denser than the bag with feathers.

Let's experiment with the density of water!

- Fill the larger container with fresh water and the smaller container with salt water.
- Add a few drops of food coloring to the small container, put the lid on and shake it up.
- Gently place the small container into the large container and carefully remove the lid.
- What do you notice? Make a note of what you observe.
- Repeat the experiment, but put salt water in the big container and fresh water with food coloring in the small container.
- Then set the small container gently in the big container and remove the lid. What happens this time? Compare your results from the first experiment.
- Based on your observations, which liquid is denser? Salt or fresh water?
- Now try the same experiment with hot and cold fresh water. What do you observe?
- Based on your experiments, which temperature water is denser?

