

Deep Sea Learning with Georgia Aquarium



Elemental Water Fact Sheet:

Key Terms:

- **Elements:** Made up of a singular kind of atom; can be made of multiple atoms but must be the same type.
- **Dissolved oxygen:** The amount of oxygen that is dissolved in water.
- **Salinity:** The amount of salt present in the water.
- **Spectrophotometer:** Measures the amount of a particular substance in the water by measuring the intensity of color after reacting with a reagent and is detected by a beam of light. The intensity of the color is proportional to the amount of the target substance.
 - ◇ The Water Quality team uses this to test for ammonia, specific oxidants and other compounds.
- **High Performance Liquid Chromatography (HPLC):** Measures the amount of a medication present in the water to help our veterinarians.



Did you know?

- Our Water Quality department handles running hundreds of tests to ensure that all of our habitats are at the optimum level of health along with testing for several other projects.
- They test air quality not just for our animals, but also for the safety and care of our guests and staff. They measure the external particles and microbes in the air outside and compare it to internal samples to make sure we are filtering the air correctly.
- They measure how much light is present in the habitats to make sure the animals are getting the correct level of exposure. Our reptiles for instance, generally need to have higher amounts of ultraviolet (UV) light.
- They also do educational programs where they Skype with students and educate them about chemistry.



The Water Quality team runs almost 5,000 tests per week!

Need more information on not just the periodic table, but also each of the elements? Check out [Los Alamos National Laboratory](#)

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Homemade pH Test:

Materials:

- Red cabbage
- Jar
- Saucepan
- Ice cube tray
- Water
- 3 cups
- Stove top
- Vinegar
- Strainer
- Baking soda



Making the Indicator:

Adult supervision is highly recommended.

1. Chop up the red cabbage into small pieces.
2. Place 2-3 cups of chopped cabbage in a saucepan.
3. Add enough water into the saucepan to cover the cabbage.
4. Bring to a boil.
5. Turn off heat and allow to sit for 30 minutes.
6. Using a strainer, pour the liquid into a jar. The liquid should be a dark purple to reddish color.
7. Pour the liquid into an ice cube tray, making as many as desired.
8. Allow to freeze, two hours is recommended.
9. Your indicator is now ready to use!

Using the Indicator:

- Using the three cups, fill the first one with water, the second one with vinegar and the third with one teaspoon of baking soda mixed with water.
- Predict the color each solution will change to when the indicator is added.
- Drop a couple of indicators into each cup and watch the color change!

Answer Key:

Vinegar will turn reddish pink, water with baking soda will turn blue- green or even yellow and water will be purple.

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