PH Natural Dye Project - Text

The pH number of a specific water sample can tell you how acidic or “basic” (AKA alkaline) it is. The numerical scale goes from 0 to 14. If a water sample’s number is lower on the scale it means it is more acidic, whereas if its higher on the scale it means it is more basic. A pH level of 7 is considered “pure” and neutral and is the ideal number for drinking water - a number located right in the middle of the scale.

What exactly does it mean for water to be acidic or basic, though? If a water source has a high pH number, it can taste bitter and encrust water pipes and water-using appliances with deposits. If it has a low pH number, on the other hand, it can corrode (or even dissolve) metals and other substances. Either extreme can be bad for living organisms. Since a water’s pH can be affected by environmental factors as well as chemicals/pollution, it is important that we collect samples and test them, the results informing us of the changes that are being made and what is safe and unsafe. Just a few water samples could potentially serve as a lens to look at the whole system.

For our class’s PH Natural Dye Project, we were asked to go collect different samples of water from 5 specific water sources (the East River, Gowanus Canal, Prospect Park Lake, tap water from our homes, and a source of our choice - for this, I chose puddle water). With these samples, we were able to separately dye 5 pieces of muslin fabric and see how the different pH levels result in different tones/colors (assuming that all the water samples had different pH levels). There were two different ways for me to tell how acidic or basic a water sample was - (1) reading the pH strips that I placed in each sample, and (2) looking at the different shades the samples had produced in the various muslin pieces. By the end of my dyeing process, I was

actually shocked by the results. Having visited the sites of all these different water sources and seeing the sources up close, I figured that the Gowanus Canal and the puddle samples would have been the most acidic, that the East River sample would fall somewhere between the two previously mentioned samples and neutral (7), ad that the other two would be around neutral. Ultimately, all samples ended up being similar pH levels, resulting in only slight differences in shade. This was actually a good sign, meaning that they were all around neutral (seeing as tap/drinking water is neutral, and tap was tested).

From this whole experience, I decided to design a t-shirt collection that would educate people not only on pH levels and how the different shades of the shirts came to be, but how to dye on their own (or really, inspire them to want to learn the natural dyeing process). To do this, each shirt was designed to have a graphic checklist on its front that lists off the materials used to achieve the specific color of that shirt (for example, sweet onion skins, a pot, a strainer, a timer, alum, and tap water). I chose sweet onion skins because of the yellow/orange dye they give off, and how its a color that will catch most people's eyes when walking down the street. There would be already dyed shirts for sale (as part of the collection) as well as plain shirts with checklists for people to dye themselves. If these shirts were something people would see everywhere, we would be more conscious towards pH levels and contaminated water (training us to associate certain shades with acidic, neutral, or basic water).