

Lesson 1: Garden Interdependence

During the first lesson, students from PS270 came to visit the Textile Dye Garden at Pratt. The garden was still blooming at this point in October, so students were able to see the vibrancy of the garden. This lesson was taught by Ana Codorean, Chris Jensen, and Gina Gregorio. Dye Garden work study students Pearl Wood and Ife Oluwamuyide also joined, and photography student Nur Guzeldere documented the day.



When students arrived at the garden, they began by observing all the different plants using magnifying glasses. Each student also had a clipboard and colored pencils to write or draw their observations. Above, Jensen can be seen showing the different parts of the oxalis plant. Codorean is seen observing the pollinators on the goldenrod with the students.



Above, a student is seen with Gregorio observing a sunflower with a magnifying glass, and drawing the yarrow with colored pencil.



After observing the plants and pollinators, students participated in a hands-on bundle dye process. Students learned about responsible harvesting, ensuring to leave enough flowers for the pollinators. Then, they worked to collect flowers and distribute them on mordanted wool skeins. Above, students can be seen arranging flowers together on a skein, and Gregorio and Codorean are seen demonstrating the hammering process in bundle dyeing.



Special thanks to Quince & Co for their generous donation of wool yarns for this project

Lesson 2: Dyeing and Chemistry

For the second lesson, Ana Codorean and Cindie Kehlet visited students at PS270 to teach a lesson centered on chemistry. Using Marigold, Black Walnut, and Hopi Sunflower, students learned how to create dye concentrates and modify colors. Kehlet and Codorean explained how chemists study change, and one way to navigate that change is through the pH scale. Students saw how vinegar could shift the dye concentrates lower on the pH scale, and soda ash could be used to shift the concentrates higher on the pH scale. In addition, students learned about Iron, another modifier that could be used to create variation in color. Using induction burners, students also learned about how heat is necessary in creating dye concentrates. They observed the color variations and immersed themselves in the smells of the dye baths.



Above, yarns submerged in Marigold and Hopi Sunflower dye baths. Students used pH strips to observe the change in pH as soda ash and vinegar were added.



Codorean and Kehlet demonstrated how heat helps release the dyes from the plants. Above is a Black Walnut and Marigold dye concentrate. Codorean is pictured showing the finished bundle dyed yarns and discussing the difference between the bundle dye process and immersion dyeing.



The resulting yarns shown together. From just three plants, a wide range of color was achieved.

Lesson 3: Materials for the Arts

Native to the New York

During the third lesson, Gina Gregorio and Ana Codorean visited PS270 to discuss natural and native materials that can be used for the arts. To integrate with PS270's unit on Indigenous People of New York, Gregorio and Codorean created a presentation featuring artwork from the Lenape, Oneida, Canarsee, Mohawk, Seneca, Onandaga, and Haudenosaunee tribes of New York. Students observed the materials and dyes that these tribes used which are native to New York. Then, students learned about other local materials that can be foraged for dyeing in New York City or in ones kitchen. Lastly, we ended with a discussion on the benefits of using natural dyes. Students learned about the impact that synthetic dyes and materials have on the planet, and how natural dyes are safer for the planet, water, people, and animals.



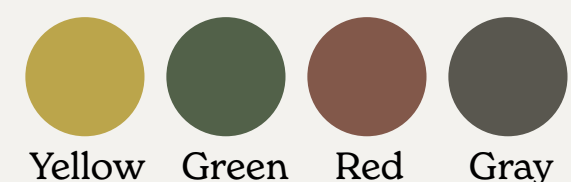
Above, students examine fabric dye swatches created by Gregorio from common foods such as cabbage, avocado, onion, and turmeric.



Above, foraging display. Included are foods like onion, turmeric, and avocado pits. In addition, local foraging items such as black walnut, acorn, pokeberry, and mugwort is included. All these items can be used for natural dyeing.



Oneida Basket with cover, made from wood splints and paint, circa 1840-1860.
Image courtesy of Museum of the American Indian



Students learned about the local materials that the tribes of New York use for the arts. In addition, students made connections between the pigments and dyes used in the images they saw with the colors in the yarns they dyed.



Two Row Wampum – Gaswéñdah


















“The belt has two purple rows running alongside each other representing two boats. One boat is the canoe with the Haudenosaunee way of life, laws, and people. The other is the Dutch ship with their laws, religion, and people in it. The boats will travel side by side down the river of life”.

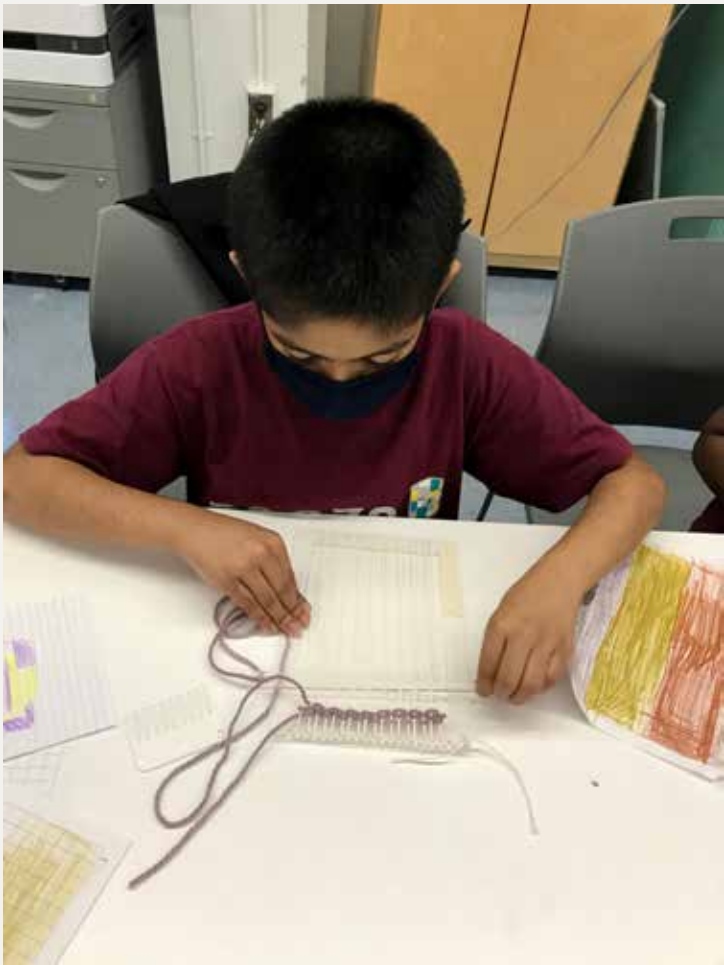
Image and text courtesy of onandaganation.org

Students learned about how symbolism through the use of stripes can be used to conveyed meaning.

Lesson 4: Weaving as Code

For the fourth lesson, Ana Codorean and Isa Rodrigues visited students at PS270 to begin weaving with the yarns they dyed. Art & Design Education graduate student and weaver Tessa Kramer also joined this lesson. To begin, students looked at several examples of how weaving and textiles have been used to convey information throughout history. Students learned about Quipa, a Pre-Columbian system to record information through knotted string, as well as handwoven core rope memory from NASA. They learned about the different types of looms, and the basic structure of weaving consisting of a warp and weft. Students then learned about how the jacquard loom was the first iteration of a computer and the predecessor to binary coding. This led into a discussion on how weaving can be used as a code to convey ideas through symbolism, tying into the previous lesson's discussion on Wampum as codes and treaties. Using the yarns they dyed as keys, students developed stripes on paper with colored pencil. Students were encouraged to create stories or codes through their color decisions. Then, they began to weave the stripes.

Available Colors	Examples of Symbols	
	 Sun	 Soil
		
	 Flower	 Rain in Garden
		
		
	 Leaves	 Pollinator
		
		
	 Water	 Garden

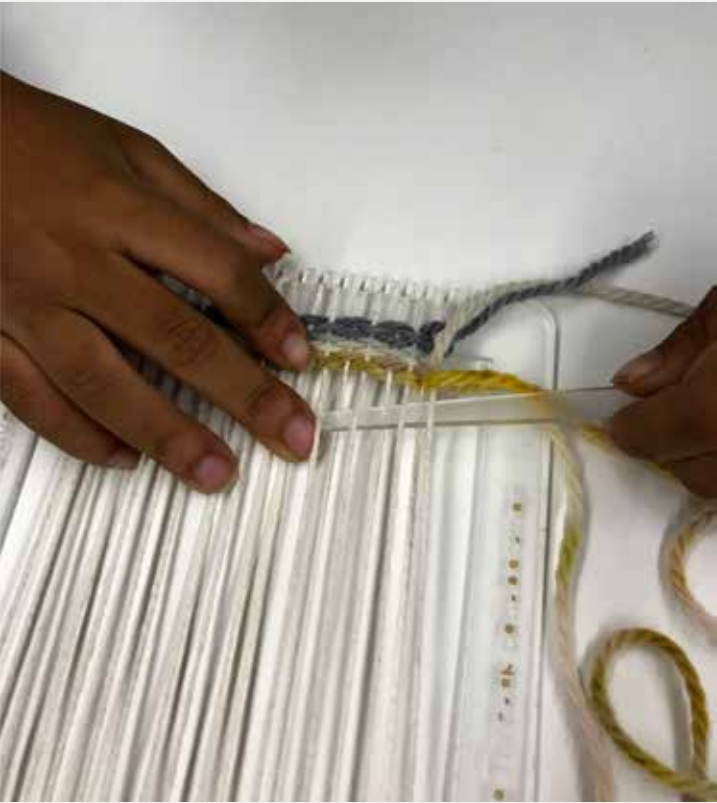
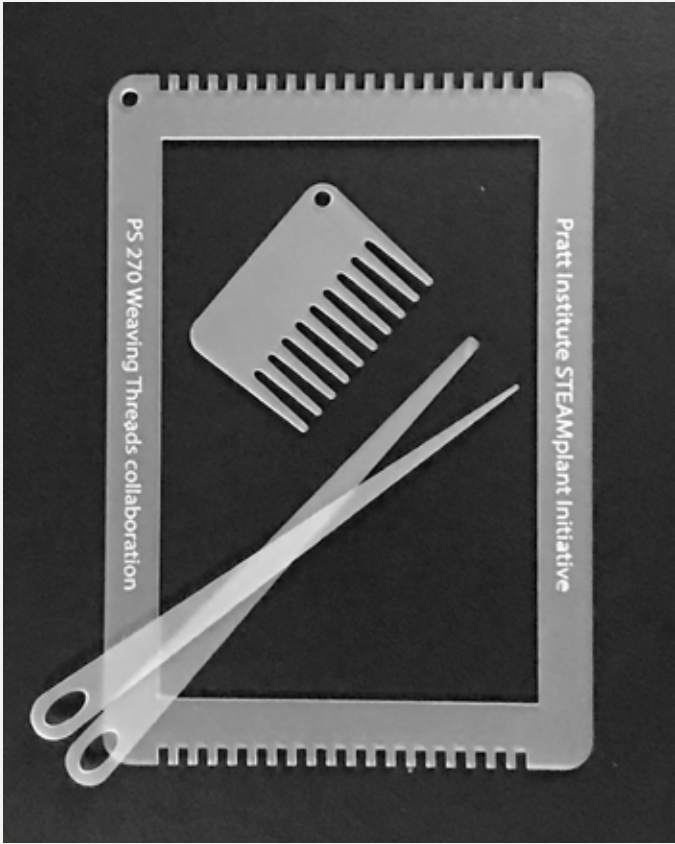


Students used the yarn cards to create their own stripe designs, using the colors and stripes as symbols. Below, Rodrigues is demonstrating the process of weaving a weft over and under a warp.



Students wove on acrylic laser cut looms. They used the dyed wool yarn for the weft, and cotton twine for the weft.

Special thanks to the Foundation Media Lab and collaboration with Jay Lemire and student Stephanie Wong for their assistance in laser cutting the looms.



Lesson 5: Weaving as Community

To wrap up the unit, Ana Codorean and Isa Rodrigues visited PS270 for the last time to help students finish the weavings they started during the fourth lesson. Students were at different places in terms of their progress, but we decided to bring the pieces together wherever they were for a communal arrangement and reflection. Students observed the effect of the individual woven piece compared with the arrangement of them as a group. We then discussed the importance of community and interdependence as a way to conclude the unit. We talked about how without the sun, rain, and pollinators, we would have no flowers. Without the plants and flowers, we would not have clean air, food for plants, animals, and humans, and materials for creative expression. Lastly, we touched upon how through responsibly using natural materials for the arts, we were participating in a creative process that created minimal harm to our environment.



Above, students work with Rodrigues to arrange the class finished and in-progress woven pieces together into a communal arrangement.



Children celebrating their finished pieces. Students were noticing that the woven pieces reminded them of hats, masks, and pants. These observations point towards the understanding that weaving and textiles appear in our everyday lives.

