



Fibers in the Science Classroom

A Science Educator/STEAM Highlight



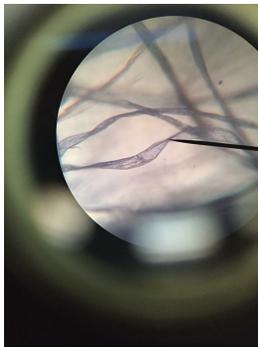
Stephanie L. Chambers
New York City Department of Education

Grades you have taught:

9th through 12th grades

How long have you included fibers in your program?

In one way or another for 10 years. I'm a high school biology teacher and would crochet science theme items to use as tactile models for my students. Seeing a 3D model of a red blood cell for example and touch it helped them remember it better than if they only saw the 2D image in a book or PowerPoint. I eventually designed a STEAM in Textiles course for high school students.



(Left) Cotton under microscope

Did you have fiber experience before you brought it into the classroom – were you a beginning, intermediate or expert fiber explorer?

Yes, I've been crocheting and knitting since I was 6 years old so fiber arts has always been one way I've expressed my creativity. I started weaving 4 years ago and spinning 2 years ago.

What are your observations of how your students react to working with fibers in the classroom?

I created this STEAM in Textiles course as a science elective to bring my love of fiber arts to my students. I also wanted to bring art and creativity back into the classroom since it has been taken out of a lot of NYC schools. Initially, the students were skeptical about the class and didn't know what to expect. A lot of them had given no thought as to where their clothes come from or how fabric is made besides answering "the store". Over the duration of the course I saw something very interesting. I saw students who normally were distracted in their other classes become focused when crocheting or weaving. Students who may have cut other classes made sure they were on time for my STEAM in Textiles class because they wanted to continue working on their project. They were actively learning something new and were proud of what they were creating with their own hands.

What is one of your favorite fiber lessons?

Lesson Unit name: The Science Behind Fabric

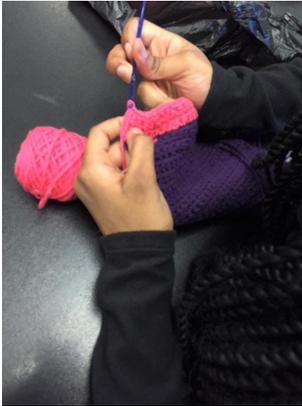
Essential questions:

- Where does fiber come from?
- How can we identify fiber differences?

Student objectives

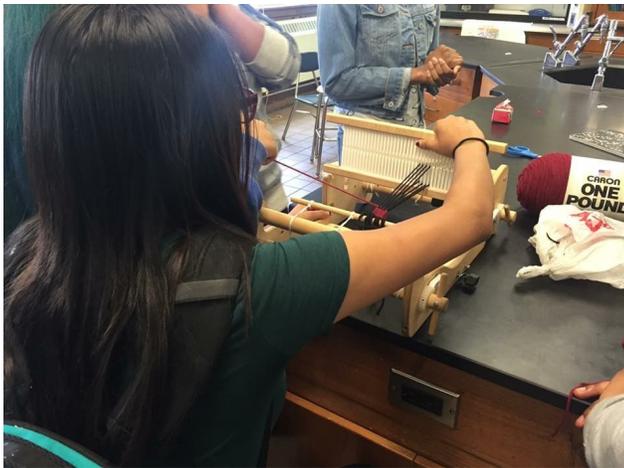
- SWBAT identify where different types of fibers come from.
- SWBAT identify structural differences of fibers by examining them under a microscope.
- SWBAT determine fiber content by conducting a burn test.

Photo of student work



Student's artist statement

"This is a scarf I crocheted for my mom. I had a good time making it, it is a very useful skill. I love the fact that you can make anything you want with it. It teaches you to have patience because you might not always get it on the first try. Although it can be frustrating when you're halfway through and you realize it didn't come out the way you wanted it to so you have to start over."



What are student observations of engagement in fiber arts activities?

- "At first I thought you were being an extra for having us do this. But it's cool to understand where our clothes come from."
- "I can see why you are always relaxed and calm now."
- "I'm not going to lie, weaving is pretty cool."
- "Now I can make my mom a scarf for Christmas instead of buying one."