A Curator’s Dilemma: Scenario

The Metropolitan Museum of Art in New York City has received a large bequeath of household goods from the Carnegie estate located on Cumberland Island, GA. One of the massive crates contains clothing and is directed towards the Costume Institute’s collection. Savannah Tucker, who is the new intern in the conservation lab and a textile specialist, is charged with the task of uncrating the gift, sorting the garments into fabric type, and documenting their condition.

Follow Savannah’s tweets for more information.
@SavTuckConserve-What a career opportunity!#CarnegieBequeathMet
@SavTuckConserve-What do you do with a ton of vintage clothes?#MetCostumeInstitute
@TyraBanks-Way to go grl!
@AndrewBolton-Keep me posted!

When Savannah uncrates the garments, she finds them all wrapped in bed sheets, and is delighted to find a wide variety of female clothing including: one Regency style ball-gown, one modern ball-gown, one petticoat, one crinoline, one suit, one pair of woven trousers, a bathing suit, a seersucker dress. Her first job is documentation, which involves forms to fill out, sketches of the garments including highlighted condition issues, and photographing the garments. Then, Savannah knows the task of finding fibers within the seams begins!

@SavTuckConserve-Score! Every conceivable type of fabric to take to the lab!
@TyraBanks-Can’t wait to see them on display!#MetCostumeInstitute
@AndrewBolton-Love the photos! Those seams are generous-great luck!

@SavTuckConserve- time to get the fibers to the lab for testing!
A Curator’s Dilemma
Brainstorm and Organize

BIG IDEA
What is the curator’s dilemma? List two things you need to know or define before understanding her dilemma?

1.

2.

ESSENTIAL QUESTIONS
List three questions you need to know the answers to before understanding Savannah Tucker’s dilemma.

1.

2.

3.

PROBLEM
What is the central challenge facing Savannah?

HYPOTHESIS
Predict what type of analysis the conservator will have to perform.
A Curator’s Dilemma: Projects

I. Construct a flowchart using the microscopic fiber analysis and burn tests to help Savannah construct a reference chart for the conservation lab. Use boxes to describe the steps, use arrows labeled with outcomes to point towards the next step or final outcome.

For example
Fiber microscopy→ natural fiber→ burn test→ cotton → Twisted, burns completely to ash

Your flowchart will have pathways leading to cotton, linen, silk, wool, and possibly a synthetic.

II. Create a timeline of fiber use in textiles. Indicate on your timeline when and where each of the fibers you identified where used in clothing. Give an example of typical garments at time at which these fibers were first used.

III. Research the role of a conservator. Create a pamphlet showing how you can help to preserve a textile and when to call in a conservator. Include one example of work a conservator can do. This example should come from a museum.
Roadmap To “A Curator’s Dilemma” PBL

Day 1
Case outline and Brainstorm activity

Student Lab Activity

FIBER IDENTIFICATION LAB I A & B

Day 2
Student Lab Activity
FIBER IDENTIFICATION LAB I C, II A, B, & C

Day 3
Lab End Product turn in
I. Microscope Sketches
II. Burn Test Tables
III. Analysis Questions

Begin final project
Brainstorm, Research, and Construct a visual representation of:
fiber analysis process in flowchart format
garment construction by fiber timeline
garment cleaning by fiber pamphlet

Deadline
Final Project Presentation
Flow Chart of Fiber Identification Analysis
Timeline of types of fiber used in garment production
Guideline pamphlet on

Assessment for PBL

Labwork End Product- 1 test grade/ individually graded
1/3 Participation
1/3 Observations – End Product I & II
1/3 Analysis- End Product III

Final Project End Product – 1 test grade /graded as a group
Flow chart and timeline
1/3 neat complete and on time
1/3 creative graphics, conveys information
1/3 contains accurate, detailed findings
BACKGROUND:
Individual fibers have unique physical and chemical characteristics. They can be classed by origin into natural and synthetic as well as subdivided into the derivative processes or organisms. Natural fibers include both plant and animal sources. Cotton and linen are the most common plant fibers while silk and wool are the most used animal fibers. Synthetic fibers, such as rayon, nylon, and polyester are a result of industrial chemistry processes.

Natural fibers have very characteristic features. Cotton fiber’s are flat fibers and twisted. Linen is smooth yet jointed like bamboo. Wool is a class of fibers from different animals, such as sheep, goat, llama, and vicuna. Most woven woolen garments are from sheep hair. This wool fiber has a rough scaly exterior. Silk from the silkworm has smooth, reflective strands. Synthetic fibers are more difficult to visually distinguish. Rayon has smooth glass-like rods, nylon has smooth clear rods, and polyester has rod-shaped cloudy fibers. All synthetic fibers are produced by polymerization where monomers are repeated and aligned in a pattern.

Natural fibers have a long history in human textile production. Cellulose is a natural polymer found in wood, paper, and cotton. Natural fibers such as cotton, linen, and wool have been used to weave many different fabrics over the course of human civilization.

Synthetic fibers have a more recent history. They were developed during the Industrial Revolution period. In 1884, Louis Bernigaut successfully created an artificial silk, which was the precursor to rayon. Unfortunately, the synthetic fabric was highly flammable and burnt a young lady while in the ballgown. In 1926, rayon was generated from the cellulose polymers produced by the DuPont Company. Nylon was first used in woman's stockings to replace the scarce silk stockings during World War II in 1940's. Nylon, as a light and durable fabric was used for parachutes and ropes. Synthetic fabrics like Kevlar, a bulletproof fabric, are also in the nylon family. Olefin is a lightweight synthetic fiber found in sportswear and thermal underwear. Acrylic and modal acrylic fibers are used with cotton to make fake sheep fleece, which is then used in deep pile coats and stuffed animals. Spandex is a stretchable fiber used in bathing suites and other sports wear.

Whether the fiber is natural or synthetic, they all are used to make fabrics by interlocking the fibers using felting, weaving, knitting, or crocheting. The fabric fiber content of modern garments is usually listed on labels and the method of fabric construction is evident under magnification.
GUIDE TO FIBERS

PLANT FIBERS
*COTTON* is derived from a cotton plant. The fibers appear as flat ribbons under the microscope that are slightly twisted. The fabric that cotton produces is soft, absorbs water, and wrinkles easily. Cotton is a fabric that is light and cool.

*LINEN* is derived from the stems of flax plants fibers which are jointed appearing like miniature bamboo. The fiber is shiny, strong, softens with use, absorbs water, and wrinkles easily. Linen is considered a cool fabric for warmer climate.

ANIMAL FIBERS
*SILK* is from the cocoons of silkworms. The fiber is double strands, smooth, and shiny. The fabric is lightweight but can keep its wearer warm when knitted and cool when woven.

*WOOL* comes from sheep. Under the microscope, it looks like scaly corkscrews. The fiber is elastic, long lasting, and resists wrinkling. Wool easily absorbs water and is known for its ability to "breathe" keeping wearers warm in the winter and somewhat cool in warmer weather. Wool picks up static electricity easily when rubbed.

SYNTHETIC FIBERS
*RAYON* is made from wood. The fibers are smooth and glass-like rods, which stretches easily. Rayon doesn’t wrinkle, is soft, and absorbs water.

*ACETATE* is a created from wood. Under the microscope there are grooves that run the length of the fibers. Acetate is soft, smooth, and will melt under a hot iron. It does not absorb water. The fabric is cool and smooth.

*NYLON* is derived from coal. The fibers under the microscope are smooth and clear rods. Nylon is shiny, tough, elastic and melts under a hot iron. The fibers are non-absorbent, quick drying, and don’t wrinkle. The fabric is cool, but clammy. When knitted, it provides form-fitting garments.

*ACRYLIC* is made from petroleum. Under the microscope the fiber is dog-bone shaped with cut ends. The fabric is lightweight, warm, and quick drying.

*POLYESTER* is derived from petroleum. Under the microscope the rod shaped fiber looks like nylon but is not clear. The fiber does not wrinkle, is silk-like, strong, and absorbent.
Continued – Resources

Example of garment collection
http://www.metmuseum.org/collections/search-the-collections?rpp=60&noqs=true&ao=on&ft=*&what=Costume&deptids=62&pg=1

History of garment construction
http://en.wikipedia.org/wiki/History_of_clothing_and_textiles#

Condition Reports for Textiles

Caring for Your Treasures
http://www.conservation-us.org/about-conservation/caring-for-your-treasures/textiles#.UuVYjLT0DJw

American Institute of Conservation
http://www.conservation-us.org