

The Adventures of Audrey Aims, Art Conservator: Teacher Guide

Subject: Elementary Gifted Resource

Grade Level: Elementary, Third Grade

Case Summary

Museums showcase art objects from all over the world, from all times in history. But how do those objects get there? Why are they important? And what if the people whose lives they represent want to have them back? Audrey Aims, Art Conservator, is about find out...

This Problem Based Learning unit is grounded in Cobb County Elementary Gifted Standards and CCGPS (Common Core Georgia Performance Standards) and has been developed for the resource (once a week) gifted classroom. Instruction will take approximately 12 weeks via interdisciplinary activities with a focus on science, research, art, and creative productivity. This unit will actively engage students in hands-on, minds-on problem solving.

Credits

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Experiments were adapted from

Smith, T., Commander, J., Etre, K., & Stein, K. (2013). Sample labs. Presented at The Science Behind Art Conservation Teacher Workshop, Emory University, July 8-12, 2013.

Unit Standards

Cobb County Elementary Gifted Standards and correlating elements:

G1. Critical Thinking: Students will utilize higher order reasoning and reflect upon their thinking.

G2. Convergent Thinking: Students will reason logically using induction and deduction.

G4. Divergent Thinking: Students will think creatively to generate innovative ideas, products, or solutions to problems.

G5. Evaluative Thinking: Students will evaluate and solve a variety of authentic problems.

G6. Relationships & Connections: Students will make relationships and connections among various topics and disciplines.

G7. Communication: Students will interact and exchange ideas, feelings, information, thoughts, and knowledge with others.

G8. Collaboration: Students will work toward a common goal with shared accountability for the final outcome.

G10. Respect for Others: Students will be respectful members of their communities.

G11. Self-Directed Learner: Students will be self-directed learners.

Scene 1: Meet Audrey Aims, Art Conservator

Case Summary

Audrey Aims is in her lab for her first day on the job as art conservator at the Michael C. Carlos Museum. Excited about new possibilities, she contemplates her career choice and begins her adventure journal.

Learning Objectives

1. Students will understand the role of an art conservator and the responsibilities associated with the position.
2. Students will research art conservator as a career: education required, job responsibilities, etc.
3. Students will research Michael C. Carlos Museum to learn about the museum and describe the types of displays found there.
4. Students will create a PBL journal for recording their learning.
5. Students will formulate thought-provoking questions to explore relationships and connections within the scene, in connection to Scene 1, and beyond the PBL to other content areas.
6. Students will support opinions, theories, conjectures, and conclusions with logical reasoning when completing and discussing their KWIQ.
7. Students will apply core critical thinking skills throughout the PBL unit and reflect upon them.
8. Students will read informational text for the purpose of extending their knowledge.
9. Students will collaborate with teammates.

Georgia Performance Standards

ELACC3W7. Conduct short research projects that build knowledge about a topic.

ELACC3W8. Recall information from experience or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

K-5 Guidance and Counseling Competencies: Standard 2.C. Career Development – Understand the relationship between person qualities, education, training, and the world of work.

Additional Materials

Scene 1 narrative
KWIQ chart #1
Journals
Craft Materials

Vocabulary

Conservator
Investigation
Intervention
Prevention
Documentation
Ancient
Artifact

Implementation Guide

DAY	TIME	ASSIGNMENT	ASSESSMENT
1	60 - 75 min	Read Scene 1 Determine collaborative groups Complete KWIQ chart Create/Design Journal	*Graphic organizer
2	120 min	Reread Scene 1 Consolidate KWIQ charts onto one master class chart Jigsaw questions and research answers to questions using provided materials; record in journals Summary of the learning (see questions)	*Participation in group discussion *Journal – reflection of labs and summarization of learning

Facilitator Guide

- Where is the Michael C. Carlos Museum?
- What types of artifacts does it house?
- What does an art conservator do?
- Why is the work of a conservator important?
- What core critical thinking skills did you utilize today? Why and when?

Resources

What is conservation?

<http://www.conservation-us.org/about-conservation#.UyDRObRCy-8>

<http://www.carlos.emory.edu/conservation/what-conservation>

Scene 2: The Adventure Begins – Helping Isis

Case Summary

Audrey Aims is visited by the Egyptian goddess, Isis. Isis desires the museum's copy of *The Book of the Dead*. Audrey must strike a bargain with her and learn all that she can about paper fibers and hieroglyphics so that she can recreate the famed piece of papyrus.

Learning Objectives

1. Students will understand that conservators need to identify paper types in order to make treatment decisions.
2. Students will understand the difference between acids and bases.
3. Students will compare and contrast acidic and non-acidic papers.
4. Students will solve the mysteries of the lab using logical reasoning.
5. Students will make predictions using deductive and inductive reasoning.
6. Students will implement the evaluative thinking process.
7. Students will research the story of Isis and Osiris, The purpose of The Book of the Dead, and hieroglyphics.
8. Students will create a papyrus and write on it using hieroglyphics.
9. Students will think creatively to generate an innovative product.
10. Students will understand and adjust communication for a given audience.
11. Students will assess, reflect, and modify their papyrus utilizing the four cognitive components of divergent thinking.
12. Students will formulate thought-provoking questions to explore relationships and connections within the scene, in connection to Scene 1, and beyond the PBL to other content areas.
13. Students will support opinions, theories, conjectures, and conclusions with logical reasoning when completing and discussing their KWIQ.
14. Students will apply core critical thinking skills throughout the PBL unit.
15. Students will read informational text for the purpose of extending their knowledge.
16. Students will collaborate with teammates.

Georgia Performance Standards

ELACC3W7. Conduct short research projects that build knowledge about a topic.

ELACC3W8. Recall information from experience or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

SC7. Students will characterize the properties that describe solutions and the nature of acids and bases.

- b. Compare, contrast, and evaluate the nature of acids and bases

SSWH1. The student will analyze the origins, structures, and interactions of complex societies in ancient Eastern Mediterranean from 3500 BCE to 500 BCE.

- b. Describe the relationship of religion and political authority in Ancient Egypt.
- e. Explain the development and importance of writing; include hieroglyphics.

Additional Materials

Scene 2 narrative
 KWIQ chart #2
 Journals
 Various paper types (newspaper, phone book, construction paper, notebook paper, printer paper, filter paper)
 Acid identifier pens
 Paper making supplies – filter paper, large tub, water, screen, blender, washcloth
 Markers
 pH test strips
 Various liquids in beakers or plastic cups (Lemon Soda, White Vinegar, Apple Juice, Baking Soda, Shampoo (preferably clear), Conditioner (preferably clear), Hand Sanitizer)
 Purple cabbage
 Strainer
 Plastic spoons

Vocabulary

Egypt	Hieroglyphics
Headdress	Deity
Ankh	Acid
Papyrus	Base
The Book of the Dead	Neutral
Isis	pH
Osiris	Fiber

Implementation Guide

DAY	TIME	ASSIGNMENT	ASSESSMENT
1	120-150 min	Read Scene 2 Complete KWIQ chart Jigsaw questions and research answers using provided materials or resources; record in journals Develop Action Plan to create scroll. Summarize the learning (see Questions for Day 1 below)	*Graphic organizer *Participation in group discussion *Journal – reflection of labs and summarization of learning *Evaluative Thinking *Process student sheet

2	120-150 min	Reread Scene 2 Paper Background information shared Acids vs Bases lab Paper lab Collaborative work on Action Plan Summarize the learning (see Questions for Day 2 below)	*Participation in labs *Journal – reflection of labs and summarization of learning *Collaboration rubric
3	120 min	Reread Scene 2 Papyrus lab Collaborative work on Action Plan Summarize the learning (see Questions for Day 3 below)	*Participation in lab *Journal – reflection of labs and summarization of learning *Collaboration rubric
4	150 min	Reread Scene 2 Collaborative work on Action Plan Present and assess, include scroll translation	*Participation in group discussion *Project Attainment *Rubric

Facilitator Guide

Day 1:

- Why is Isis trying to revive Osiris?
- How will the Book of the Dead aid her in this quest?
- Why do you think the ancient Egyptians wrote The Book of the Dead? What was its intended purpose?
- What core critical thinking skills did you utilize today? Why and when?

Day 2:

- What is the difference between an acid and a base?
- How does acid affect paper?
- What type of paper lasts longer? Why?
- What do you predict is the acidity of papyrus? Why?
- What core critical thinking skills did you utilize today? Why and when?

Day 3:

- What is papyrus made from?
- Who decoded hieroglyphics? Why did it take so long to figure it out?
- What core critical thinking skills did you utilize today? Why and when?

Resources

Isis and Osiris

<http://images.scholastic.co.uk/assets/a/b4/98/jet-ibc-9308.pdf>

Paper

<http://www.hqpapermaker.com/paper-history/>

Making Papyrus

<http://www.historyforkids.org/crafts/projects/papyrus.htm>

<http://www.crayola.com/crafts/egyptian-papyrus-paper-craft/>

Hieroglyphics

<https://education.scholastic.co.uk/resources/5167>

<http://egypt.mrdonn.org/hieroglyphics.html>

<http://www.virtual-egypt.com/newhtml/hieroglyphics/>

Acid/Base Lab

<http://www.stanford.edu/~ajspakow/downloads/outreach/ph-student-9-30-09.pdf>

<http://emhs151254.tripod.com/hcab.html>

<http://www.stevespanglerscience.com/lab/experiments/red-cabbage-chemistry>

Scene 3: The Adventure Continues – Assisting Inti

Case Summary

Audrey Aims is visited by the Incan god, Inti. Inti demands the ancient Andean double bird motif textile belt. Audrey must strike a bargain with him and learn all that she can about natural textile fibers and geometric patterns so that she can recreate the belt.

Learning Objectives

1. Students will understand that conservators need to identify fiber types in order to make treatment decisions.
2. Students will compare and contrast cotton and wool fibers.
3. Students will solve the mysteries of the lab using logical reasoning.
4. Students will make predictions using deductive and inductive reasoning.
5. Students will implement the evaluative thinking process.
6. Students will research the story of Inti and information about South American textiles.
7. Students will create a textile belt decorated with geometric patterns.
8. Students will think creatively to generate an innovative product.
9. Students will understand and adjust communication for a given audience.
10. Students will assess, reflect, and modify their belt utilizing the four cognitive components of divergent thinking.
11. Students will formulate thought-provoking questions to explore relationships and connections within the scene, in connection to Scenes 1 and 2, and beyond the PBL to other content areas.
12. Students will support opinions, theories, conjectures, and conclusions with logical reasoning when completing and discussing their KWIQ.
13. Students will apply core critical thinking skills throughout the PBL unit.
14. Students will read informational text for the purpose of extending their knowledge.
15. Students will collaborate with teammates.

Georgia Performance Standards

ELACC3W7. Conduct short research projects that build knowledge about a topic.

ELACC3W8. Recall information from experience or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

S5L3. Students will diagram and label parts of various cells (plant, animal, single-celled, multi-celled).

- a. Use magnifiers such as a microscopes or hand lenses to observe cells and their structure.

SC1. Students will analyze the nature of matter and its classifications.

- b. Identify substances based on chemical and physical properties.

SFS2. Students will use various scientific techniques to analyze physical and trace evidence.

- b. Analyze the morphology and types of hair, fibers, soil, and grass.

SSWH8. The student will demonstrate an understanding of the development of societies in Central and South America.

- b. Compare the culture of the Americas; include government, economy, religion, and the arts of the Mayans, Aztecs, and Incas.

Additional Materials

Scene 3 narrative
 KWIQ chart
 Journals
 Pure textile samples (wool and cotton)
 Strand of human hair
 Piece of notebook paper
 Tweezers
 Candle
 Matches or lighter
 Magnifying glass

Vocabulary

Incan Empire
 South America
 Inti
 textile
 luminescent
 offering
 fiber
 geometric pattern
 natural
 synthetic

Implementation Guide

DAY	TIME	ASSIGNMENT	ASSESSMENT
1	120-150 min	Read Scene 3 Complete KWIQ chart Jigsaw questions and research answers using provided materials or resources; record in journals Determine groups and create action plan to create belt. Summarize the learning (see Questions for Day 1 below)	*Graphic organizer *Participation in group discussion * Journal – reflection of labs and summarization of learning *Evaluative Thinking *Process student sheet
2	120-150 min	Reread Scene 3 Fiber Background information shared Fiber lab Collaborative work on belt creation Summarize the learning (see Questions for Day 2 below)	*Participation in labs *Journal – reflection of labs and summarization of learning *Collaboration rubric

3	120 min	Reread Scene 3 Collaborative work on belt creation Summarize the learning (see Questions for Day 3 below)	*Participation in lab *Journal – reflection of labs and summarization of learning *Collaboration rubric
4	120-150 min	Reread Scene 3 Collaborative work on belt creation Present and assess	*Participation in group discussion *Project Attainment Rubric

Textile Identification Lab – Modified for 3rd Grade

Introduction

Many objects are made from textiles, including tapestries (wall-hangings), upholstery, quilts, clothing, etc. These objects may be functional as well as decorative, and are often collected as works of art or historic artifacts. Textiles are woven from fibers. These fibers can be animal, plant or man-made. Common historical fibers used include cotton, wool, silk, and linen. Conservators need to identify fiber types in order to make treatment decisions. Different fibers will react differently to various chemicals. Categorizing fiber types also helps conservators identify the origin of a textile because different fibers are characteristic of different regions. Cotton and wool were often used in Ancient American art. Silk had numerous uses in art and trade in China, while linen was used extensively in Ancient Egypt. In this lab, students examine various natural fiber types using physical and chemical characteristics.

Objectives

- Compare and contrast different types of natural fibers using magnification and burn tests

Georgia Performance Standards

SCSh4. Students use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.

- a. Develop and use systematic procedures for recording and organizing information.

S5L3: Students will diagram and label parts of various cells (plant, animal, single-celled, multi-celled).

- c. Use magnifiers such as a microscopes or hand lenses to observe cells and their structure.

SC1 Students will analyze the nature of matter and its classifications.

- b. Identify substances based on chemical and physical properties.

SFS2. Students will use various scientific techniques to analyze physical and trace evidence.

- b. Analyze the morphology and types of hair, fibers, soil and glass.

Materials

Strand of human hair

Piece of notebook paper or newsprint, cut in 10cm x 10cm pieces

Pure textile samples -wool and cotton, 10cm x 10cm pieces

Synthetic textile sample – polyester and/or nylon, 10cm x 10cm pieces

**Be sure to use light neutral colored fabrics (tan, beige, or off white)*

Microscope slides or plastic pieces for mounting items

Tweezers (metal, unpainted)

Magnifying glasses

Candle in a stable holder

Matches or lighter

Safety

Be careful with an open flame. Also make sure the area is well ventilated as to not cause the fire alarms to go off while completing the burn tests.

Teacher Pre-lab

Magnification Test

1. Cut out a 10cm x 10cm piece of paper. Mount on a slide or clear plastic film.
2. Repeat for each of the fabrics.
3. Using tweezers and a straight pin, pull threads from cotton, wool and synthetic pieces.
4. Mount on a slide or clear plastic film and label A, B, and C.
5. Shred one end of a thread to reveal the fibers.
6. Mount on a slide or clear plastic film and label A, B, and C.
7. Print and cut out the images of the different fibers provided in the teacher resources, *Natural Fiber Images* and *Synthetic Fiber Images*. You may want to laminate for protection. Create a key of the images for student use.

Burn Tests

1. Cut a 2cm x 2cm piece of paper.
2. Cut a 2cm x 2cm piece for each of the fabrics. Label with a letter for identification.
3. Obtain a piece of human hair.

Lab

Review with students the proper way to use a magnifying glass. Explain and demonstrate to the students how they will use the magnifier to examine different threads and fibers in order to try and identify the item. Distribute the *Student Magnification Lab Sheet* for student recording.

I. Magnification Test

A. Paper & Human Hair

1. Use the magnifying glass to look at a mounted piece of paper. Draw and write a detailed observation of the paper.
2. Use the magnifying glass to look at a strand of human hair. Use the magnifying glass to look at details. Draw and write a detailed observation of the hair.
3. Discuss the findings.

B. Natural and Synthetic Fibers

1. Use the magnifying glass to look at Sample A. (Do not reveal that it is cotton.)
2. Draw and write a detailed observation of the sample.
3. Use the fiber and synthetic images to predict the possible identification of fabric "A".
4. Repeat steps 1-4 with fabrics "B" (wool) and "C" (synthetic).

II. Burn Tests

A. Paper & Human Hair

1. Hold the paper sample with the tweezers. Carefully set the paper on fire using a lit candle. Write detailed observations of the paper, including the smell.
2. Hold a piece of human hair with the tweezers. Carefully set the hair on fire. Write detailed observations of the hair, including the smell.

B. Natural Fibers

1. Hold the 1cm x 1cm piece of fabric "A" with tweezers.
2. Bring the fiber sample near the flame. Write observations of the fabric.
3. Now put the fabric directly in the flame. Write observations of the fabric, noting the smell.
4. Write observations of the ashes of fabric "A".
5. Use the Table 1 (student) to give possible identifications of fabric "A".
6. Repeat steps 1-5 with fabrics "B", "C", and possibly "D".

Clean up

All materials can be disposed of in the trashcan.

Optional Lab - Using a Microscope to view fibers

If you have access to microscopes that students may use,

Natural Fibers

1. Obtain a 1cm x 1cm piece of cotton fabric and place it on a slide. View the dry mount using low (4x) and high (10x) power. Draw what you see.
2. Place a small drop of water on the fabric and cover with a cover slip.
3. Using low power (4x), put the slide on the stage, center the fabric in the field of view.
4. Label, describe and draw what you see.
5. Carefully view fabric "A" using high power (10x). Be sure to only use the fine adjustment to focus. Describe and draw what you see.
6. Use provided photos to try to identify the fibers.
7. Repeat steps 1-5 using wool fabrics
8. **Students can also view fibers using 40x power if available.*

Facilitator Guide

Day 1:

- Why was Inti so revered?
- Why would a farmer give the textile belt to Inti?
- Why do you think the ancient Incas believed their ruler was related to Inti?
- What core critical thinking skills did you utilize today? Why and when?

Day 2:

- What is the difference between wool and cotton?
- What is the difference between natural fibers and synthetic fibers?
- Linen was used extensively in Ancient Egypt. Do you think it is made from natural fibers or synthetic ones? Why?
- What core critical thinking skills did you utilize today? Why and when?

Day 3:

- What animals is Andean wool usually made from?
- It has been said that in order for South American weavers to create a textile, the weaver would have to possess both outstanding creative and mathematical abilities. Why is this?
- What core critical thinking skills did you utilize today? Why and when?

Resources

Inti

<http://www.machupicchu-inca.com/inca-gods.html>

<http://latinamericanhistory.about.com/od/ancientlatinamerica/p/Inti-The-Inca-Sun-God.htm>

Fibers

CCI Textile Lab (2008). Natural Fibres. *CCI Notes 13/11*. Retrieved from

http://www.cci-icc.gc.ca/publications/notes/13-11_e.pdf

CCI Textile Lab (2010). The Identification of Natural Fibres. *CCI Notes 13/18*. Retrieved from

http://www.cci-icc.gc.ca/publications/notes/13-18_e.pdf

University of Ohio, College of Education and Human Ecology. *Fiber Reference Image Library*.

<https://fril.osu.edu/index.cfm?fuseaction=site.getThisPage&SitePageID=124&Page=Browse%20Collections>

[http://www.nios.ac.in/media/documents/SecHmscicour/english/Home%20Science%20\(Eng\)%20Ch-10.pdf](http://www.nios.ac.in/media/documents/SecHmscicour/english/Home%20Science%20(Eng)%20Ch-10.pdf)

How to Make Looms

http://www.ehow.com/how_5259940_make-use-backstrap-loom.html

<http://www.instructables.com/id/how-to-weave-on-a-cardboard-loom/?ALLSTEPS>

Incan Weavings

<http://www.incas.org/category/weavings>

<http://www.naturalhistorymag.com/features/112333/the-mur-a-code>

Meet Audrey Aims, Art Conservator: Scene 1

Audrey Aims sat in her research lab and studied the museum artifact lying on the table.

“I can’t believe that I’m actually on my first day on the job as an art conservator in a museum! And the Michael C. Carlos Museum at that!!! All my hard work at the University of Cambridge has actually paid off. All of those science classes – chemistry, physics, biology – plus all of the art history and drawing, pottery, and weaving classes – I finally get to put them to real use in a real job!”

“I wonder what part of the job I should focus on first? - investigation...intervention... prevention...hmmm, I know that I will have lots of documentation to do no matter where I begin. Where is my journal so I can start writing everything down...”

Suddenly, a cold gust of air rustled the papers on the table and the hair on the back of Audrey’s neck stood up.

“Where did that come from?” she wondered.

Audrey glanced around the room nervously. Sitting up in her chair and steeling her back, Audrey chuckled to herself. Obviously surrounding herself with ancient artifacts would have an effect on her already overactive imagination. Audrey opened her journal and prepared to log her daily schedule.

Audrey silently contemplated, “Schedule....agenda...there must be a better way to consider my work. I know..... I am an explorer of the unknown! A researcher of mysteries! This journal will chronicle my adventures!”

Audrey closed the cover of her journal and pulled a pencil out of her desk. She sharpened her pencil and slowly but surely printed “The Adventures of Audrey Aims, Art Conservator”.

K	W	I	Q
<i>What do we know based on the scene? What are the facts?</i>	<i>What do we want/need to know?</i>	<i>What can we infer?</i>	<i>What questions need to be researched in order to develop a better understanding of the scene?</i>
	<div data-bbox="611 813 1043 857" data-label="Text"> <p>VW: <i>Vocabulary we need to know</i></p> </div>		

The Adventure Begins – Helping Isis: Scene 2

Journal Entry 1:

What an exciting first week on the job! Wow! When I signed my contract as an art conservator for the Carlos Museum I had NO idea what I was in for!

Last Monday I was working late into the evening bathing an ancient portrait and singing along with the Bangles – *“All the old paintings on the tombs, they do the sand dance. Don’t you know?”* My happy tune came to a sudden end when I realized I was not alone! There was a presence in the room with me!

I spun around and stared into the face of a beautiful Egyptian goddess. She was wearing a headdress shaped like a throne and carrying an Ankh. Years of education told it had to be Isis. I rubbed my eyes and stammered for a few moments before finally regaining my ability to speak.

“Can....can I help you?” I asked timidly.

“I come in search of the papyrus.” She responded. “I have located all fourteen parts of Osiris and require the secret words to bring him back to life.”

“Are you looking for the Book of the Dead?” I asked.

“Yes. I understand the Carlos Museum has the portion I need. Provide it immediately!” Isis commanded.

I knew that if I gave away a prized artifact to an Ancient Egyptian deity I would probably lose my job. So, thinking fast, I offered up another idea. “Please let us keep our portion of the Book of the Dead so that all who visit the Carlos museum will learn your name and of your good works. I understand you need the hieroglyph key in order to bring back your husband. I will create what you need.”

Isis looked pensive. Then she smiled and nodded. “It must be authentic as possible!” she declared. “You have three days Conservator.” Then she was gone.

What to do... Where to start...my mind was whirling. A slow smile started across my face. After all, I do love an adventure!

K	W	I	Q
<i>What do we know based on the scene? What are the facts?</i>	<i>What do we want/need to know?</i>	<i>What can we infer?</i>	<i>What questions need to be researched in order to develop a better understanding of the scene?</i>
	VW: <i>Vocabulary we need to know</i>		

Name _____

The Adventure Begins: Helping Isis

Audrey is in need of an authentic papyrus scroll resembling *The Book of the Dead* to provide to Isis so that she can bring Osiris back to life. She must present it to Isis in three days. With your group, follow the Evaluative Thinking Process in order to complete this task.

1. What is the problem? (Define it):

2. What needs to be done to solve this problem? (Analyze it):

3. Who will do what? Determine group roles. (Establish goals):

4. What exactly will be completed? (Generate solutions):

5. What is the best solution? (Rank solutions above)

6. Move forward with the work. (Research and explore the chosen solution)

7. Evaluate your work.

- Will it appease Isis?
- Does it demonstrate creativity?
- Does it demonstrate research and understanding?
- Did your group work collaboratively as a team?

8. Present your scroll.

The Adventure Continues – Assisting Inti: Scene 3

Another amazing, engaging day on the job – my days are never boring here at the museum! It's like a constant fiesta! Well....at least to me it is!

Today the museum received a box of textiles from a young lady whose great, great grandfather was a South American explorer. He kept this box of ancient blankets and wraps from the Incan Empire in his basement for years.

I was in the middle of emptying the box onto the lab tables when one beautiful piece caught my eye. It looked like a belt. I picked it up carefully to examine the exquisite weaving and then.....

The room suddenly went completely dark. I walked to my desk to find a flashlight. I was bent over a drawer, blindly searching when the corner of the room lit so brightly I had to shade my eyes. I stood up in shock and turned towards the luminescent ball of heat. Staring at it was like trying to look into the sun. That's when I realized I WAS looking into the FACE of the sun!

"Who..what...are you? Can I help you?" I stammered.

A booming voice replied, "I am Inti, the Incan Sun God. I come to recover what is rightly mine. It was given to you but was an offering to ME - a gift to make sure I would shine on the farmer's crops. It was stolen from my country. Hence, it was stolen from me!"

Intuition told me he meant the belt that I had been admiring. I knew that this belt and the other pieces would be important to have in the museum. I had to think quickly or things would go bad very fast and the Atlanta area would be beltless. Thankfully I had experience with quick thinking and ancient deities.

“I know how much you want to have this returned,” I crooned, “but if it was here in the safety of the museum all who visit here would learn to appreciate the value of the Incan culture, and learn about the talent of your people. Please give me three days to create a belt for you that will shine as brightly as you do!”

Inti stared brightly at me, deep in thought. “I will give you 3 days, and then I will return. But I warn you, it must be made as my people would have made it. I had better be impressed with what you have for me, art conservator...or else!” The lights flickered and then came back on. Clearly, I was off on another adventure!

K	W	I	Q
<i>What do we know based on the scene? What are the facts?</i>	<i>What do we want/need to know?</i>	<i>What can we infer?</i>	<i>What questions need to be researched in order to develop a better understanding of the scene?</i>
	VW: Vocabulary we need to know		

Student Guide for Magnification Lab

Name _____

Item name or Letter	Draw what you see with the magnifying glass	Describe what you see with the magnifying glass	Prediction	Actual
Paper				
Human Hair				
A				
B				
C				
D				

How did you use deductive reasoning to make textile predictions? Explain your thought process.

Student Guide for Burn Test

Name _____

Type of Fiber	Burn Test						
	Near Flame	In Flame	Out of Flame	Odor	Ash	Prediction	Actual
Paper							
Human Hair							
A							
B							
C							
D							

Name _____

A *physical property* is an aspect of matter that can be observed or measured without changing it.

A *chemical property* is a property or characteristic of matter that is observed during a reaction in which the chemical composition or identity of the matter is changed.

1. Explain how you tested one item for its physical properties and for its chemical properties. Tell what you discovered about that item.

2. Why do you think scientists would need to use both physical property and chemical property tests to identify fibers or other items?

3. Synthetic fibers were created by scientists in labs. Since there are excellent fibers found in nature, what reasons can you give for scientists deciding to create synthetics?
