

Under the Microscope

Student Resource

Name: _____

Overview

This resource supports students in engaging the RLC Presents: Art + Science video, [In the Lab: Under the Microscope](#). Complete the activities in this lesson to closely investigate textiles with magnification tools. Use the vocabulary you learn in the vocabulary activities to complete the additional stations.

Table of Contents

1. Overview	Page 1
2. “See, Think, Wonder”	Page 2
3. Initial Model/Explanation	Page 3
4. Vocabulary: Two Truths and A Lie Game	Page 4
5. Vocabulary: Warp and Weft	Page 5
6. Textile Inquiry Stations	Page 6–9
7. Final Model/Explanation	Page 10
8. Learning Reflection	Page 11
9. Possible Extensions	

**Your teacher may provide additional prompts to explore the collection and respond creatively.*



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“SEE, THINK, WONDER”

The close-up or micro view of the textile featured in the UV Investigations video was made through a microscope. Observe this image to complete the chart below. Sentence starters are provided to help you get started. Once you complete the chart, answer the question at the bottom of this page.

What do you see when looking at the textile? <i>I see...</i> <i>I notice ...</i>	What do you think about when looking at the textile? <i>I think... because I see ...</i> <i>Seeing... makes me think ...</i>	What questions do you have while looking at the textile? <i>Seeing ... makes me wonder...</i> <i>I wonder why ...</i>

1. What differences do you notice between the overall or macro view of this textile and the view of this textile made under magnification?

Name: _____

INITIAL MODEL/EXPLANATION

Initial Student Model/Explanation

Which material do you think would work best to make a shirt that would be comfortable to wear in the summer?

Circle or check mark your answer.

Linen

Polyester

Wool

Burlap

Fleece

Why do you think this material would be best?

Explain your answer in words, pictures, or a combination of both. This is an educated guess, you will have an opportunity to revise your response after learning more.

Name: _____

VOCABULARY: TWO TRUTHS AND A LIE

Using the vocabulary information sheets, create two truths and a lie for one vocabulary word. An example is provided. Do this activity with your classmates so that you cover each vocabulary word. Once completed, take turns challenging your classmates to identify the truths and lie for the vocabulary words. When sharing out, be sure to mix up the order of the truths and lies so as to not give the answer away.

Example:

Word: Microscope

Truth #1: I am used to make little things appear larger.

Truth #2: I can show lots of details the human eye cannot see by itself.

The Lie: I am used to see small objects that are far away.

Word:

Truth #1:

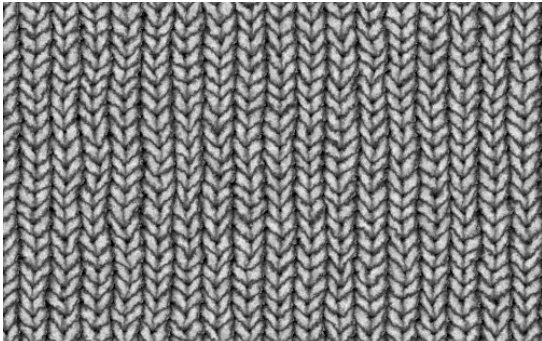
Truth #2:

The Lie:

VOCABULARY: WARP AND WEFT

Most fabrics are knit or woven, as seen below. What do you notice? Discuss with your classmates.

Knit

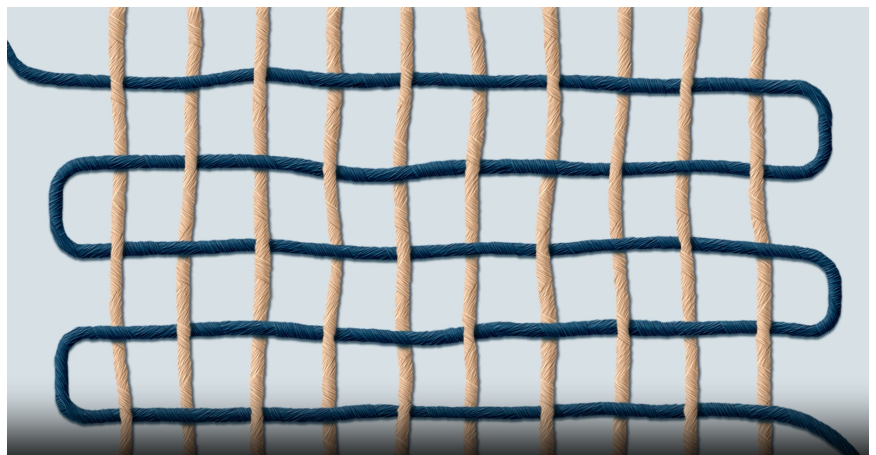


Woven



Warp and Weft

In the Art+Science video, conservator Issac Facio analyzes the warp and weft of a woven textile to learn more about how it was made. Use the definitions from the vocabulary information sheet and the image of woven threads to the right to answer the following questions.



1. Which color thread is the warp?

Blue

Tan

Why did you choose this answer?

2. Which color thread is the weft?

Blue

Tan

Why did you choose this answer?

3. What do you think would happen if the weft didn't alternate over and under?

Name: _____

STUDENT TEXTILE INQUIRY STATIONS

Station 1: Textile Observations

Using the textiles provided, make observations using your eyes and your hands. Record your observations in Table 1.

Table 1: Textile Observations

Textile	Describe what the textile feels like	What does the textile look like? <i>Use words or pictures</i>	Other Observations
Linen			
Polyester			
Wool			
Burlap			
Fleece			

Station 2: Close Looking—Textile Observations Using a Magnifying Glass

Using the same samples from station one, take a closer look at each textile using the magnifying glass. Record your new observations in the appropriate column of Table 2. Compare the observations you made for each textile and complete the last column of Table 2.

Table 2: Close Looking Observations

Textile	What does the textile look like? Can you tell if this fabric is woven or knit? <i>Use words or pictures</i>	What new observations were you able to make about this textile using a magnifying glass? <i>Use at least 1 vocab word in your response.</i>
Lin		
Polyester		
Wool		
Burlap		
Fleece		

Station 3: Microscopic Observations

Conservator Issac Facio most frequently uses a microscope when analyzing textiles. Using the same samples from station one, take a closer look at each textile using the microscope. Record your new observations in the appropriate column of Table 3. Compare the observations you made for each textile and complete the last column of Table 3.

Table 3: Microscopic Observations

Textile	What does the textile look like? Can you tell if this fabric is woven or knit? <i>Use words or pictures</i>	What new observations were you able to make about this textile using the microscope? <i>Use at least 1 vocab word in your response.</i>
Linen		
Polyester		
Wool		
Burlap		
Fleece		

Name: _____

FINAL MODEL/EXPLANATION

Final Model/Explanation

Revise your model [on page 3](#) or create a new model below using your lived experiences combined with the knowledge you gained as you completed the inquiry stations.

Which material do you think would work best to make a shirt that would be comfortable to wear in the summer?

Circle or check mark your answer.

Linen

Polyester

Wool

Burlap

Fleece

Why do you think this material would be best?

Explain your answer in words, pictures, or a combination of both. Be sure to include knowledge you learned from the inquiry stations.

Name: _____

REFLECTING ON MY LEARNING

Choose one question from each column and respond to it in the box below.

<p>What was the most challenging part of today's learning? Be sure to explain.</p>	<p>What activity did you like the best? Why?</p>	<p>How can you apply what you learned today in the real world?</p>	<p>Write two questions you still have after completing today's learning.</p>
<p>What did you do today that helped you learn best? Be sure to explain.</p>	<p>Which activity did you like the least? Why?</p>	<p>What does today's learning help you understand better?</p>	