As you get settled...

• Explore the primary sources laid out around the room...

• Select one that engages you!
Exploring Practices, Nature of Science, and Science in Society:
Analyzing Historical Primary Sources from the Library of Congress
Connecting with Primary Sources

• Find a primary source that engages you.
• Observe your item silently.
• Think about why you selected the source.
Connecting with Primary Sources

• Turn to a neighbor and introduce yourself.

• Share your primary source with them.

• Tell them why you selected it.
Connecting with Primary Sources

Photographs

Maps

Newspapers

Prints

Music

Manuscripts
Why teach with primary sources?

What are some of the benefits of engaging students using primary sources?
Analyzing Primary Sources

• Engage students.

• Promote critical thinking.

• Construct knowledge.

• Launch student research.
SANCTORII SANCTORII
DE
STATICA
MEDICINA
APHORISMORUM
Sectiones Septem:
CUM
COMMENTARIO
MARTINI LISTER.

LUGDUNI BATAVORUM.
Apud CORNELIUM BOUTESTEYN,
MDCCIII.
SANCTORII SANCTORII
DE STATICAMedicina
Aphorismorum
Sectiones Septem:
Cum
Commentario
Martini Lister.

Lugduni Batavorum.
Apud Cornelium Boustesteyn,
MDCCIII.
SANCTORII SANCTORII
DE
STATICA MEDICINA
APHORISMORUM
Sectiones Septem:
cum
COMMENTARIO
MARTINI LISTER.

LUGDUNI BATAVORUM.
Apud CORNELIUM BOUTESTEYN,
MDCC III.
What do you think is happening?
SANCTORII SANCTORII
DE
STATICA MEDICINA
APHORISMORUM
Sectiones Septem:
CUM
COMMENTARIO
MARTINI LISTER.

LUGDUNI BATAVORUM.
Apud CORNELIUM BOUTESTEYN,
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SANCTORII SANCTORII
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SANCTORII SANCTORII
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STATICA
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Sectiones Septem:
CUM
COMMENTARIO
MARTINI LISTER.

LUGDUNI BATAVORUM.
Apud CORNELIUM BOUTESTEYN,
MDCCIII.
# Primary Source Analysis Tool

- **Observe**
- **Reflect**
- **Question**

**Further Investigation:**

**Additional Notes:**
I see a man sitting on a chair. There is plate of food in front of him. The table has wheels! His foot is resting on the floor. I see a book cover dated 1703 (MDCCIII). There are screws protruding on the table. "Medicine" looks like "Medicine." I see unfamiliar words – Latin.

The men has eaten a meal. This was a long time ago - 300 years! Think - The man is being weighed before and after a meal. It looks like he is being tortured! This is a medical journal. The subject of the study must be biology. He is "punished" every time he reaches for food.

Is the man sitting on a scale? Why is his foot resting on the floor? How much does the man weigh? Why are there wheels on the table? Is this a hospital? If the man moves, will the screws fall on his head? Is the man now well? What is going on here? What is the purpose of this diagram?

Further investigation:
Is this some sort of scientific study that involves eating + weighing? What were the findings and how were they important (if at all)?

Additional notes:
TEACHER'S GUIDE
Analyzing Photographs & Prints

OBSERVE
Have students identify and note details.

Sample Questions:
- Describe what you see.
- What do you notice first?
- What people and objects are shown?
- How are they arranged?
- What is the physical setting?
- What, if any, words do you see?
- What other details can you see?

REFLECT
Encourage students to generate and test hypotheses about the image.

Why do you think this image was made?
- What’s happening in the image?
- When do you think it was made?
- Who do you think was the audience for this image?
- What tools were used to create this image?
- What can you learn from examining this image?
- What’s missing from this image?
- If someone made this today, what would be different?
- What would be the same?

QUESTION
Have students ask questions to lead to more observations and reflections.

What do you wonder about...
- who?
- what?
- when?
- where?
- why?
- how?

FURTHER INVESTIGATION
Help students to identify questions appropriate for further investigation, and to develop a research strategy for finding answers.

Sample Question: What more do you want to know, and how can you find out?

A few follow-up activity ideas:

Beginning
Write a caption for the image.

Intermediate
Select an image. Predict what will happen one minute after the scene shown in the image. One hour after? Explain the reasoning behind your predictions.

Advanced
Have students expand or alter textbook or other printed explanations of history based on images they study.

For more tips on using primary sources, go to http://www.loc.gov/teachers

@TeachingLC
[Santorio Santorio seated in weighing chair in front of table, part of his quantitative approach to medicine, and title page of De statica medicina aphorismorum]
Why teach with primary sources?

What are some of the benefits of engaging students using primary sources?
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Why teach with primary sources?

NSTA Connection: Nature of Science

• How do scientists and engineers practice in the real world?
• How do scientific ideas change over time?
• How is science related to society?

What other connections to science education?
BLOG
Modeling Scientific Practices with Primary Sources: The Art and Science of Robert Hooke

Using primary sources in the science classroom can offer a meaningful historical perspective on the evolution of scientific ideas and reinforce key practices employed by the world's great scientists.

Contributor: Lederle, Cheryl
Date: 2015-02-26

PHOTO, PRINT, DRAWING
[Microscopic view of an ant]
1 print : engraving.
Contributor: Hooke, Robert
Date: 1665

PHOTO, PRINT, DRAWING
[Springs and devices for measuring their tension and strength]
1 print : engraving.
Contributor: Hooke, Robert
Date: 1674
Microscopic view of an ant

Titre: [Microscopic view of an ant]

Contributor Names: Hooke, Robert, 1635-1703.

Created / Published: [1665]

Subject Headings:
- Ants--1660-1670
- Biology--1660-1670

Part of:
- Rare Book and Special Collections Division (22,310)
- Prints and Photographs Division (846,648)
- Library of Congress Online Catalog (966,676)

Format:
- Photo, Print, Drawing
Teacher Page

Teacher’s Guides, Analysis Tools, and more…

Curated collections of primary sources with activity suggestions…

No cost professional development opportunities and resources…

Primary source highlights and teaching suggestions…

The Library of Congress offers classroom materials and professional development to help teachers effectively incorporate primary sources for the Library’s teaching collections in their teaching.
Understanding the Cosmos: Changing Models of the Solar System and the Universe

Analysis Tool & Guide
To help your students analyze these primary sources, get a graphic organizer and guides.

Constellation Andromeda as recorded by al-Sufi
Download as PDF

Illustration of a solar and lunar eclipse
Download as PDF

Representation of the universe with heaven above, bands containing stars, planets, and Earth below
Teaching with Primary Sources

Right to the Source

Exploring Science and History With the Library of Congress
Michael Apfeldorf

Uncovering a Tiny World

Today, we take the grandeur that we see in the natural world for granted, and only rarely stop to marvel at its beauty. This was not the case in the 17th century, when the invention of the microscope changed the way scientists and the public viewed the natural world. The Dutch scientist Antonie van Leeuwenhoek published his seminal work, *Micrographia*, in 1665. This collection of illustrations and descriptions of microscopic organisms was the first to be published in Europe. It was a turning point in the history of science, as it revealed the existence of microorganisms that could only be seen through a microscope.

Other microorganisms, such as bacteria and viruses, were later discovered. However, it was not until the mid-20th century that they were finally observed. This was due to the development of newer technologies, such as electron microscopy.

As a result, scientists were able to study and understand the behavior and growth patterns of microorganisms. This led to the development of new treatments and therapies for diseases caused by these microorganisms.

In conclusion, the microscope has been a key tool in the study of microorganisms. It has allowed scientists to observe and understand the behavior and growth patterns of these organisms, which has led to the development of new treatments and therapies for diseases caused by them.

About the Source

Robert Suchard's *Micrographia* (1665), showing views of the ocean floor, is available online through the Library of Congress. The images were created using a microscope and a camera lucida, and they provided a visual representation of marine life. The author, Robert Hooke, was a contemporary of Isaac Newton, and he is credited with the invention of the compound microscope.

He used his microscope to observe the natural world, and he was the first to describe the structure of cells, as well as the presence of microorganisms in the ocean. His work was instrumental in the development of the field of biology, and it paved the way for the study of marine life.

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Questions?

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