

2022 Three-Day Seminar SAMPLE Schedule



STEAM to the Past, Design for the Future

Description:

This seminar explores the interdisciplinary links between eighteenth-century history and STEAM in the daily lives of American Indians, British colonists, and free and enslaved Blacks. Participants will compare the experiences of the three diverse groups of people, specifically applied to STEAM—the sciences, technology, engineering, art, and math. Participants will engage with historical interpreters, investigate applied science principles such as design and engineering, chemistry, transportation, and energy, and combine these experiences into dynamic classroom lesson ideas that incorporate primary sources, collaboration, inquiry, and problem solving.

Objectives:

As a result of this seminar, teachers will be able to:

- Identify scientific processes and theories that were necessary for eighteenth-century people to solve everyday problems.
- Incorporate primary sources and next-generation science standards into interdisciplinary lessons that connect history content to science, technology, engineering, and math content standards.
- Connect the past to the present by allowing students to explore how historical STEAM contributions affect our world today.
- Explore how modern tradespeople use experimental archaeology and reverse engineering to better understand the science, technology, engineering, art, and math strategies of past.

Compelling Question: How does understanding eighteenth-century science, technology, engineering, art, and math help us solve modern-day problems?

Sunday: Arrival/Travel Day

- 4–6:30 p.m. Teachers arrive and check in at the Williamsburg Woodlands Hotel**
Meet your Colonial Williamsburg Master Teacher for the seminar and settle into your room. If you arrive before 5:00 p.m., you may want to eat dinner before Orientation. *Huzzah! Eatery* is next to the Woodlands Hotel and would be a good choice.
- 7:00 p.m. Orientation**

Day 1: Monday Daily Life Science

“Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals, and happiness.” ~ Thomas Jefferson to George Washington, 1787

Supporting Questions:

- What do primary sources tell us about the lives of eighteenth-century people?
- What are the scientific principles behind eighteenth-century technology?
- What was the lasting impact of agricultural science in the eighteenth century?

7–8:00 a.m. Breakfast

8:00 a.m. Travel to Historic Area

8:15 a.m. Overview of the Historic Area

On this short walking tour, learn about the eighteenth-century capital city as a center for Enlightenment thought and ideas.

9:00 a.m. Rare Breeds and Farm Products

Explore how European settlers were taught local American Indian agricultural practices and learn about the enslaved labor force that tended crops and livestock in the colony.

10:15 a.m. Break and Travel

10:30 a.m. Changes in State

Learn about the “arts and mysteries” of the metalworking trades and the reverse engineering used to uncover the science behind the trades work of the past.

11:30 a.m. Lunch

1:30 p.m. Cooking with STEAM

Explore STEAM connections to cooking, including measuring ingredients, the physical science of boiling point, melting point, etc., and the presentation of a fine plate.

2:30 p.m. Break and Travel

2:45 p.m. Archaeology

Explore archaeology as a technical field that uses math, problem solving, and thinking skills.

3:45 p.m. Break and Travel

4:00 p.m. Master Teacher Application Session

Your Master Teacher shares strategies for bringing history to life in the classroom using the experiences and materials gained from participating in the Teacher Institute.

SAMPLE Schedule
Subject to change

4:00 p.m. Exploration Time
Recommended Sites: Wythe House, Everard House, Shoemaker, Engraver, Colonial Garden

5:00 p.m. Dinner on Own

Day 2: Tuesday

Engineering Past, Present, and Future

“The rapid progress true Science now makes, occasions my regretting sometimes that I was born too soon.” ~ Benjamin Franklin to Joseph Priestly, 1780

Supporting Questions:

- How does nature influence and inspire design?
- How can studying the history of engineering help address contemporary issues?
- How were basic engineering principles reflected in eighteenth-century structures?

7–8:15 a.m. Breakfast

8:15 a.m. Bus to Historic Area

8:30 a.m. Native Engineering

Learn how American Indians engineered structures to suit their environment and lifestyle. Examine and build models of Native structures and compare them to the John White images. How did American Indian structures change over time and with what influences?

9:30 a.m. English Engineering

Explore how European colonists designed and built their structures. How did English building designs change over time and with what influences? Who built the English structures in America?

11:00 a.m. Lunch and Exploration Time

Recommended Sites: Wythe House, Everard House, Trade Shops, Charlton Coffeehouse

1:30 p.m. Architectural History

Take a behind-the-scenes tour with Matt Webster, the Director of Architectural History, to learn how buildings can be used as primary sources. How can the way a structure is built help us discover the past?

2:30 p.m. Break and Travel

3:00 p.m. A Scientific Toolbox

Identify the scientific principles behind eighteenth-century technology and describe how these scientific principles work. Topics to be explored include chemical and physical changes, states and properties of matter, and simple machines, i.e., levers, pulleys, incline plane, and wheel and axle.

3:45 p.m. Resource Sharing Session

Colonial Williamsburg has numerous resources that include interdisciplinary lessons. We'll show you where to find some of our favorite lessons, then provide time to brainstorm how to integrate interdisciplinary lessons into your classroom.

SAMPLE Schedule

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4:30 p.m. Break and Travel

5:00 p.m. Dinner

Day 3: Wednesday

Transportation and Exploration

*“From star to star the mental optics rove,
Measure the skies, and range the realms above.
There in one view we grasp the mighty whole,
Or with new worlds amaze th' unbounded soul.”*

~ Phillis Wheatley, poem excerpt, *On Imagination, Poems on Various Subjects Religious and Moral*, 1773

Supporting Question:

- How has transportation stayed the same or changed over time?
- Why is exploration still important today?
- How can we design for future exploration?

7–8:15 a.m. Breakfast

8:15 a.m. Bus to the Historic Area

8:30 a.m. Traveling by Land

Take a tour of the Colonial Williamsburg stables and speak with one of our carriage drivers about eighteenth-century travel and modes of transportation. Explore carriages, carts, riding chairs, and horses.

9:30 a.m. Travel Time

10:00 a.m. Hot Wheels at the Wheelwrights

Wheels kept things rolling in the eighteenth century—from gentry-owned carriages to farm wagons, oxcarts, and cannons. Designed to meet the stresses of unpaved roads, wheels were feats of good engineering and careful craftsmanship. See how the wheelwright combines several different types of wood, iron tires and bands, and sophisticated construction to make their functional but elegant wheels and vehicles.

10:45 a.m. Maps and Exploration

Join Katie McKinney, the Margaret Beck Pritchard Associate Curator of Maps and Prints, for an exploration of the map exhibit at the Art Museums of Colonial Williamsburg. Learn how to integrate these images of the world into your classroom instruction.

11:30 a.m. Lunch

12:00 p.m. Museum Exploration Time

1:00 p.m. Break and Travel

2:00 p.m. Traveling by Sea – Nautical Voyages

Explore Special Collections to discover nautical items that can be used as primary sources in your classroom.

< **Concurrent Sessions** >

Colonial Games

Whether traveling by land, air, or sea, a long trip gets boring. It's the perfect time to break out some portable eighteenth-century games. Shut the Box, Cap' Morgan's Revenge, and other card games were popular with eighteenth-century travelers. Explore the science concepts and math strategies used in eighteenth-century games, and then compare them to modern games.

3:15 p.m. Traveling by Air –

Meet a Person of the Past: George Washington

The first manned hot air balloon flight in America occurred January 9, 1793. George Washington recounts his experience observing the launch and speaks to the potential of this new technology.

4:00 p.m. Master Teacher Session and Reflection Time

Your Master Teacher shares strategies for bringing history to life in the classroom using the experiences and materials gained from participating in the Teacher Institute.

4:30 p.m. Graduation and Wrap-up

5:00 p.m. Dinner on Own

Day 4: Thursday
Departure Day

7–8:15 a.m. Breakfast