



STEAM Through Heritage Preservation: Middle School Curriculum

NATIONAL COUNCIL FOR PRESERVATION EDUCATION NCPE

The Heritage STEAM Coalition is Seeking Public School Teachers for PAID Summer Positions!

Are you a teacher who would like to help us develop and refine an exciting, new curriculum (*STEAM Through Heritage Preservation*) that reinforces academic Science and Technology standards through an interdisciplinary preservation lens (e.g, history, advocacy, architecture, engineering, trades and more)? **Selected individuals will receive a stipend of \$2,000 for fulfilling a 40 to 50-hour (total) commitment over the course of the Summer and/or Fall 2022.**

What is *STEAM Through Heritage Preservation*?

This past year, the Association of Preservation Technology International (APTI) joined with American Institute of Architects Historic Resources Committee (AIA HRC) and National Council for Preservation Education (NCPE) to form The Heritage STEAM Coalition, a group of industry and academic professionals dedicated to bringing heritage education to public schools. To help support classroom teachers and increase the diversity of the pipeline for students choosing higher education and/or careers in heritage preservation, The Heritage STEAM Coalition developed *STEAM Through Heritage Preservation*, a six-unit experiential curriculum designed to provide public school educators with relevant content and activities that reinforce middle-school STEAM curriculum standards as they ignite students' interest in the fields of architecture, engineering, and construction. The curriculum has an equity focus and reflects the need to celebrate and protect the histories of historically marginalized groups



Why is this object significant?

Who wore the shoe?
Does the shoe represent *something else, something bigger?*



"While Harris' signature shoe style might not seem like a big deal—and yes, it isn't as significant as, say, the fact that she's the first Black woman and first Indian American vice president—they do send a message about who she is and her approach to politics."

Why Kamala Harris' Converse Are Much More Than Just Sneakers
The Vice President and her quirky style are the perfect fit.



CER Claim / Evidence / Reasoning

C **Claim:** Answer to a question

- A statement that is said to be true or a conclusion based on observations and/or scientific data.
- The rest of the response (Evidence & Reasoning) should justify the claim.

E **Evidence:** Data to support the claim

- Facts gathered from reliable sources.
- Quantitative and/or qualitative data that was provided or collected during a lab procedure.
- Observations from the data should prove the claim is correct.

R **Reasoning:** Connects the evidence to the claim

- Explanations of the reason why the claim is true based on facts and data interpretation
- Relevant scientific principles and laws are described.



Unit Summaries

UNIT 1 Understanding Community and the Built Environment, and Sharing MY Community

Students participate in exercises to learn about the many ways community is defined, understand what the built environment is and contemplate how architectural features reflect or reject values and needs of the community.

UNIT 2 Using Claim, Evidence, and Reasoning (CER) to Understand Historic Preservation and the Concepts of Equity and Significance

Students practice classic research, debate, and presentation techniques to investigate the differences between our built and natural environment and to learn the benefits of historic preservation. Students discuss how an equity lens helps to ensure all communities and cultures are represented in historic preservation work. Students are given a range of examples to evaluate and apply criteria for determining significance.

UNIT 3 Architecture and Historic Preservation

Students learn what architecture is, and how architecture expresses different stories and connects us to the past. The students will be exposed to key architectural skills, including the iterative design process; using geometric shapes; determining gross area, perimeter, net area, and volume; working in 3D and 2D; creating 2D bubble diagrams; recognizing patterns and creating tessellations; scale and ratio.

UNIT 4 Structural Engineering and Historic Preservation

Students gain exposure to the language and practice of structural engineers, including identifying basic structural components of a building and making connections to the human body, learning how load travels through a building or object, basic common properties of building materials, and how engineers use math and science to solve problems. Students practice principles of load path and resistance in a model bridge-building and stress testing exercises.

UNITS 5&6 Historic Preservation Community-based Projects

Students work in pairs or teams to identify a local community and research the needs of that community. Students will then develop a compelling narrative and design concept for the re-use of a local historic property or site based upon data reflecting community needs, such as for recreation, affordable housing, or cultural education. Teams will create floor plans, 3D physical models using materials provided in their "kits", renderings/graphics and/or final presentations to local stakeholders (family members, school staff, design professionals, community representatives, and political leaders).



What are the Requirements for the Position?

The Heritage STEAM Coalition is currently **seeking public school educators (grades 4 to 8)** who are interested in contributing to, piloting, and evaluating the effectiveness of STEAM heritage framework and materials developed to date. We are looking for teachers who are excited to learn more about heritage preservation and who are interested in interdisciplinary (cross-curriculum) teaching.

Selected individuals will be paid a stipend of \$2,000 for fulfilling a 40 to 50-hour (total) commitment over the course of Summer and/or Fall 2022, which will likely include:

- Virtually meeting and coordinating with members of the coalition to become familiar with STEAM heritage (1 hour weekly, for 6 to 8 weeks).
- Reviewing and providing written feedback on adapting the framework materials to align with local educational standards (12 - 16 hours).
- Participating in delivering sample lessons to students enrolled in a local non-profit summer STEAM programming (20-24 hours). Note that these programs will be organized and led by local industry professionals and/or the partnering non-profit organization's staff. The goal of classroom teacher involvement is for the teacher to observe the delivery of the heritage framework and brainstorm how materials/lessons might be further adapted or delivered differently to be successful in a public-school setting.

While teachers from all parts of the United States and Canada are encouraged to apply, Summer and Fall 2022 activities are being focused predominantly in the following "pilot" geographic areas:

- Greater Lafayette Area, Indiana.
- Greater San Antonio Area, Texas.
- Greater Boston Area, Massachusetts.

Preference will be given to individuals who are located physically in the pilot geographic areas, and who express interest in adapting/delivering the materials for use in their classroom, from Fall 2022 to Spring 2023. Additional financial support is available for continued involvement.

Apply Now!

If you or a teacher you know is interested in applying, please email a 1-page letter of interest and resume to APTI's Academic and Research Committee Co-Chairs, Michael Tomlan (mat4@cornell.edu) and Helena Currie (Helena.currie@wsp.com), by May 27th, 2022.

Qualified candidates will be contacted by June 3rd, 2022 to setup a 30-minute virtual call/interview with members of the Heritage STEAM Coalition. Final selections will be made by June 15th, 2022.

We look forward to hearing from you!

Sincerely,

The Heritage STEAM Coalition