Integration of art conservation science and cultural heritage preservation
in General Chemistry

Vision Statement

To promote the application of chemistry content and students' skills within the chemistry education community, your work will be available to future students to learn relevant course concepts applied to art conservation science.

Activity Description

The assignment consists of selecting and analyzing artwork with relevant cultural heritage importance to the students in light of chemistry concepts in the course. Students will prepare a written report following a provided template.

Tools and materials

Students will use *Microsoft PowerPoint* to prepare their reports. A template is available for students to organize their work. To complete the assignment, you should seek help from your instructor or via other university resources (e.g., Sam Houston State University's Academic Success Center, Department of Chemistry Teaching Assistants). *See this assignment as a learning opportunity to clarify chemistry concepts in the course.*

Museum visit

1. Visit the Sam Houston Memorial Museum. The museum is free for university students with their ID.
2. Select one object made of fabric or textile (not paper), and take a photo.
3. Select one object made of metal, and take a photo.
4. Select one object made of paper, and take a photo.
5. Select one painting artwork, and take a photo.
6. Museum information about the artwork: write a brief description of the selected art (i.e., fabric or textile, metal, paper, painting), its history, and relevant information gathered during the museum visit. Do not select an object that has limited information. Your response should be 50 words long. You might find more information about the object on the museum website.

Art conservation science connection

7. Which selected object/artwork is the most relevant to you? Why does this object hold relevance to you? This is a personal type of question. Your response should be 200 words long.
8. Watch all of the videos below for the corresponding type of object/artwork you selected:
    a. Metal Conservation
        - Alamo Cannon Restoration at Texas A&M - https://www.youtube.com/watch?v=AsH1Ol2h2IQ
        - Preserving Texas history at the RELLIS Campus - https://www.youtube.com/watch?v=tzjjr1yd7ww
        - Restoring Historic Alamo Cannons at Texas A&M - https://www.youtube.com/watch?v=yvqFxeo-BcQ

[This file is supplemental material to Villalta-Cerdas, *Bridging the Worlds of Art and Science: How General Chemistry Empowers Cultural Heritage Preservation,* prompt 8.1 (2024), doi: 10.31719/pjaw.v8i1.178]

- The Alamo Battle Cannons Return - https://www.youtube.com/watch?v=K9k9gf3ugjg
- Conservation of iron artifacts at Jamestown - https://www.youtube.com/watch?v=IcFAxXJCxLQ

b. Paper Conservation
- Behind the Scenes at NYPL's Conservation Lab - https://www.youtube.com/watch?v=5yi7PbN7AmQ
- Conserving Old Master Drawings: A Balancing Act - https://www.youtube.com/watch?v=Qw6NOFJCI8Q
- The Chemistry of Bathing, "A Harlot's Progress" - https://www.youtube.com/watch?v=BKEfOXNYzr8

c. Fabric and Textile Conservation
- Conserving Textiles - Asian Civilisations Museum - https://www.youtube.com/watch?v=HNtc99I3lcE
- See behind the scenes at the National Trust's Textile Conservation studio - https://www.youtube.com/watch?v=DL06L-wKLqA
- Conservation of a 12th-century textile - https://www.youtube.com/watch?v=wLTagmvGPdw

d. Painting Conservation
- Why are paintings by Reynolds so difficult to clean? Art Restoration - National Gallery - https://www.youtube.com/watch?v=t9sz0avCgN0
- Examining a Panel Painting - https://www.youtube.com/watch?v=FqabRaE_BSk
- The Conservation of Nelly O'Brien - https://www.youtube.com/watch?v=iKDYwH62-C0&ab_channel=TheWallaceCollection

9. Write a summary of the videos you watched and the connections you found with chemistry concepts or techniques covered in the CHEM1411 course. Your response should be 200 words long.
10. Browse the internet and find another video with information relevant to art conservation of the type of object/artwork you selected. Write a summary of the video you found and justify its relevance to preserving the object/artwork and how it connects to the CHEM1411 course content. Your response should be 200 words long.

Reflection on the assignment

11. Based on what you learned from the videos, how can understanding the chemistry of the objects/artwork promote the conservation of cultural heritage in Texas? Your response should be 200 words long.
12. Why is it important to preserve objects and artwork like the ones found at the Sam Houston Memorial Museum and, more generally, in Texas? Your response should be 300 words long.

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