



<p>Description This activity is meant to extend your students' knowledge of the topics covered in our Chemistry of Plastination lab. Through this activity, your students will explore the culture and science that go into preserving human remains.</p>		
<p>Grade Level 8-12</p>	<p>Student Outcomes Students will:</p> <ul style="list-style-type: none"> Identify multiple reasons for preserving human bodies. Carry out an investigation and analyze data. Cite evidence to support a claim. 	<p>NGSS connections</p> <ul style="list-style-type: none"> Science and Engineering Practices <ul style="list-style-type: none"> Asking questions and defining problems Planning and carrying out investigations Analyzing and interpreting data Obtaining, evaluating, and communicating information
<p>Duration 60 minutes</p>		<p>Common Core ELA Standards</p> <ul style="list-style-type: none"> Reading Informational Texts: <ul style="list-style-type: none"> Grade 8: RI 8.1-9 Grades 9-10: RI 9-10.1-8 Grades 11-12: RI 11-12.1-7 Writing Text Types and Purposes: <ul style="list-style-type: none"> Grade 8: W8.1-2 Grades 9-10: W9-10.1-2 Grades 11-12: W11-12.1-2 Writing Research to Build and Present Knowledge <ul style="list-style-type: none"> Grade 8: W.8.7-9 Grades 9-10: W.9-10.7-9 Grades 11-12: W.11-12.7-9

Materials

- Writing materials (pencils/pens, paper, etc.)
- Devices to access the internet
- (Optional) Worksheet

Vocabulary

Familiarity with these terms and concepts will enhance students' experience in the activity.

- Plastination:** The process by which human or animal remains are preserved and impregnated with polymers.
- Plastinate:** The resulting specimen of the plastination process; an odorless, durable, preserved human or animal specimen that can be studied for generations.
- Polymer:** A substance that has a molecular structure consisting chiefly or entirely of a large number of similar units bonded together.
- Solvent:** A substance that dissolves a solute (a chemically distinct liquid, solid or gas), resulting in a solution.



Introduction

The lab at The Tech Interactive provides hands-on access to the scientific concepts that are used to create the plastinates in the exhibition *Body Worlds: Decoded*. How can we contextualize this knowledge and the exhibit, particularly when there are so many philosophical questions it dredges up? This activity helps students explore how the science of modern day embalming came about; it is a long story with lots of twists and turns. Only some of them are provided in this activity, which allows lots of room for additional research.

Procedure

1. Pose a big question for the class related to preservation of human remains and their visit to *Body Worlds: Decoded*. You can have them create their own or create a class KWL chart. Here are a few suggested questions:
 - What do we know about why we preserve specimens after they die?
 - Does environment play a role in why some cultures preserve their dead?
 - What methods have been used in the past to preserve bodies?
 - How do events like wars and plagues influence culture and cultural perception of handling the dead?
 - How have views of cadavers changed and stayed the same over time?
2. Decide with or for your class the parameters of research for answering these questions and how they should provide their responses:
 - Parameters of research could include: quantity of resources, quality of resources, time allowed for research, etc.
 - Responses could include: making a poster, a web page, a presentation, or writing a blog post.
3. Have students conduct their area of research. We have created a Google Tour to help. This Tour explores historic embalming practices around the world, providing images, articles, and other resources for your students to learn more. <http://bit.ly/2WwKRY5Embalming>
4. Provide appropriate time for students to craft and share their responses to their research.

Grade Level Modifications

Grades 9-10	<ul style="list-style-type: none"> • Cite sources using MLA or APA formats. • Have students generate their own research question or narrow down the assigned topic. • Have students conduct assessments of their sources.
Grades 11-12	<ul style="list-style-type: none"> • Have students provide claims and counterclaims if their research topic offers more than one viewpoint. • Have students present their findings using some sort of graphic, table or chart.

Extended Learning

- Have students conduct interviews with doctors on their view on the role of dissection in becoming qualified medical care providers.
- Conduct a Socratic Seminar around student research questions
- Integrate historical and social science analysis skills including:
 - Chronological and spatial thinking
 - Analyze one of the stops on the “History of Embalming” tour to identify how that change in practice relates to the social, economic or political trends of that time and place.

Research Question:



History of Embalming Practices

<http://bit.ly/2WwKRY5Embalming>

What do you already know about your question?	What are you curious about? Are there additional questions that you have?	What have you learned from your research?

Resources