

Teacher Tool 258: The Science Behind Archaeology Study Guide

Study Guide for Archaeology 2: The Science Behind Archaeology

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The Science Behind Archaeology

Original Program Date: April 4, 2018

Grade Levels: 7-12

Program Description:

Ever wondered what happens at an archaeological dig? How archaeologists decide where to dig, how to dig, what tools to use, and how to identify what they find? Interact with archaeologists currently working on a dig in Ireland to investigate these questions and more.

Through the course of this program, we explore those questions in a number of ways. Students meet and learn from an archaeologist currently working on a dig in Lough Ce, Ireland. They engage in activities related to archaeology, find out how to set up an archaeological dig, investigate how artifacts are found and extracted, and learn about the processes used to date those artifacts. We see video of the site and answer student questions.

More details on the topics explored in the program, the order they are explored, is included in the Program Format section later in this document.

Program Objectives:

1. The participant will learn from archaeologists working on a current archaeological dig.
2. The participant will gain a greater understanding of the nature of archaeology and the processes, tools and equipment used at an archaeological dig.
3. The participant will explore methods used to test, date, and catalog artifacts found at an archaeological dig.
4. The participant will engage in critical thinking and creative thinking.

Program Format:

The agenda below provides you the topics to be explored in the program as well as the order of that exploration.

I. Welcome and Introduction—Student groups and experts are introduced and welcomed to the program and given information on ways to interact during the program.

II. Setting Up an Archaeological Site—Using video and still images from the Irish dig along with any tools/equipment brought by the guests, hosts and guests discuss how an archaeologist determines a site is viable for a dig and then sets up the dig itself, etc.

III. Extracting Artifacts from an Archaeological Site—Using video and still images from the Irish dig along with any tools/equipment brought by the guests, hosts and guests discuss and show artifacts are removed from a dig to ensure their quality and integrity

IV. Dating Materials from an Archaeological Site—Again using video and still images from the Irish dig along with any tools/equipment brought by the guests, hosts and guests discuss what happens once the archaeologist returns from the dig with artifacts and finalizes age, use, importance, etc. of artifacts found.

V. Summary and Closing—We summarize the major concepts learned and deal with a final question regarding examples of how their education helped prepare them for their careers.

Featured National Standards:

The following **Common Core Standards for English/Language Arts and Literacy in History/Social Studies, Science and Technical Subjects** are referenced in this program:

College and Career Readiness Anchor Standards for Reading

7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

College and Career Readiness Anchor Standards for Writing

6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

College and Career Readiness Anchor Standards for Speaking and Listening

1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

College and Career Readiness Anchor Standards for Language

6. Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Featured National Standards: (Science)

Unifying Concepts and Processes - Unifying concepts and processes help students think about and integrate a range of basic ideas which builds an understanding of the natural world

1. Systems, order, and organization
2. Evidence, models, and explanation

Science as Inquiry - Science as inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science.

1. Abilities necessary to do scientific inquiry
2. Understandings about scientific inquiry

Program Activity Suggestions:

These activities could be done prior to viewing the archived program to help prepare students for what they will see or after viewing the program to provide more opportunity to learn about topics explored in the program.

1. Learn About the Location of the Archaeological Dig—The purpose of this activity is to get students thinking about Lough Ce, the location in Ireland where the archaeologists joining us for the program are currently searching for artifacts at an archaeological dig. To engage in this exploration, consider using

information and examples from any of the web resources below, and/or having student explore the sites on their own. Have students share information with each other about what they learned.

Web resources to learn about Lough Ce:

https://en.wikipedia.org/wiki/Lough_Key

<http://www.britainirelandcastles.com/Ireland/County-Roscommon/MacDermotts-Castle.html>

https://en.wikipedia.org/wiki/McDermott%27s_Castle

<https://www.youtube.com/watch?v=nhiVJmD7jKA> : Drone footage of the castle at Lough Ce

<http://www.hectv.org/watch/hectv-presents/irelands-medieval-mystery-unearthed-promo/25737/> Promo of upcoming HEC-TV documentary dealing with the archaeological dig at Lough Ce

2. Think About What Happens at an Archaeological Dig—This activity gives students a chance to explore what goes on at an archaeological dig to help them develop a frame of reference for the program. To engage in this exploration, consider using information and examples from any of the web resources below as well as any of your own, and/or having student explore the sites on their own.

Web resources to learn about archaeological dig sites:

How long does it take to excavate an archaeological dig site?

<https://science.howstuffworks.com/environmental/earth/geology/excavate-archaeological-dig-site.htm>

How to perform an archaeological dig: <https://sciencing.com/perform-archaeological-dig-2065469.html>

Basic Archaeology: What's a Dig?

<http://www.socialstudiesforkids.com/articles/archaeology/whatsadig.htm>

3. Think About What Happens with the Artifacts Found at a Dig— This activity gives students a chance to think about what happens to the artifacts found at an archeological dig, and what goes on at an archaeologist's lab. Students can compare what they learn in their individual research to information learned during the program.

Web resources to learn about what happens with artifacts:

<https://livesandlegaciesblog.org/2015/09/10/after-digging-what-happens-in-the-archaeology-lab/>

<https://www.youtube.com/watch?v=iyaUEAKrXtg>

<https://www.youtube.com/watch?v=xLlJXYKDx-Y>

Vocabulary:

The following terms and their definitions are highlighted in the program and/or in the program's preparatory materials:

Archaeologist

Archaeology

Excavation

Seriation

Stratigraphy