

LESSON PLAN

#DINALEDIVR CLASSROOM ACTIVITY

Estimated Time:	60 minutes 15-30 minutes post-field trip discussion		
Essential Question:	How do archaeologists systematically excavate a site? How can we learn about people in the past (or present) by studying the things that they left behind?		
Vocabulary Archaeology Artifact Excavation Site	LEARNING OBJECTIVES		
	Students will be able to: <ul style="list-style-type: none"> ▪ Plan and design a research protocol to answer a scientific question ▪ Record and analyze archaeological data ▪ Make interpretations based on observed patterns in data 		
	TEKS		
	SCIENCE	CONTENT 5.7D - identify fossils as evidence of past living organisms and the nature of the environments at the time using models INVESTIGATION AND REASONING 3.2D - analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations 4.2D - analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured 5.2D - analyze data and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence	

MATERIALS

Per Group	Per Student
Virtual reality headsets #DinalediVR virtual reality program (For classroom or during a field trip at the Perot Museum of Nature and Science) Option 1 - Archaeological teaching materials <ul style="list-style-type: none"> ▪ Casts of animal bones ▪ Casts of human bones ▪ Modern ceramics (broken into pieces) ▪ Arrowhead replicas ▪ Printed pictures of cave paintings or ancient writing (<u>Example from U.S. and Czech Republic</u>); More available on Wikimedia Commons Option 2 - Assorted objects associated with a particular group of people (eg college students, teenagers in the early 2000s, etc). See "Procedure" section for suggestions	Pencil Clipboard Graphing Paper (Optional)

PROCEDURE

Before your students experience the #DinalediVR Virtual Reality program, introduce them to the concept of archaeological fieldwork by completing the activity outlined below. Note that there are two options for this lesson depending on available classroom materials. Materials provided will change the discussion and the findings, but the procedure/methodology will remain largely the same. For option 1, set up stations as described below with the archaeological teaching materials.

- Casts of animal bones
- Casts of human bones
- Modern ceramics (broken into pieces)
- Arrowhead replicas
- Printed pictures of cave paintings or ancient writing ([Example from U.S.](#) and [Czech Republic](#)); More available on Wikimedia Commons. For Texas examples, see [Shumla Archaeological Research & Education Center](#)

For Option 2, follow these instructions:

Identify a population of people, and set up five stations with materials that they likely use/d. For instance, if your population is college students, you may set up five stations with:

- College textbooks
- Ramen noodles
- Clothing with university logos
- Campus maps and brochures about classes and programs
- Receipts from Starbucks

If you choose to build an “archaeological” site that was left behind by people in the early 2000s, you may set up five stations with:

- Books, magazines and newspapers from the early 2000s
- Popular toys from the early 2000s
- CDs from the early 2000s
- Posters with bands that were popular in the early 2000s
- Old cellphones, portable CD players and other electronics that were new in the early 2000s

Base your “population” on the materials that are available to you. It can be as simple as setting up an archaeological site left behind by the classroom down the hall, or a re-interpretation of the items that are already in the classroom. If archaeologists were to find this classroom in 2,000 years, what would they think of our society? What would they assume that we did? What would they think was important to us?

Set - Up

Gather archaeological teaching materials (Option 1), or other objects (Option 2) and place them in five “stations” throughout the classroom. Pair like materials together (e.g. all hunting tools in one station, all animal bones in one station...etc.) Depending on space and classroom layout, either “hide” the materials in drawers, bookshelves, etc., or place the materials in shoeboxes.

Classroom Procedure

1. As students enter the classroom, inform them that they are entering an archaeological site. Today in class, they will excavate the site and see if they can understand more about the people that used to live here. Their mission is to find out (1) who used to live here and (2) what their lives were like.
2. Briefly review relevant concepts and vocabulary. Definitions are listed below.
3. Divide students into groups of 3-5, and inform them that their evidence is hidden around the classroom. Give them five minutes to come up with a strategy for excavating the site. Explain to students that they will need to gather as much information about the objects that they find, because that is all of the evidence that they will have.

PROCEDURE, CONTINUED

4. Instruct each group to begin at their station, and give them 5-7 minutes to excavate the objects that they find. After 5-7 minutes, have students rotate to their next station.

Discussion Guiding Questions

- What evidence did you find?
- Based on what you found, who do you think lived here? Why?
- What do you think their lives were like? Why?
- What other evidence would you need to be more sure?
- Are there any tests that you could do to learn more about this group?
- Was your excavation strategy effective? What were some ways that it could have been improved?

Inform students that during their field trip, they will get to see what it is like to excavate an archaeological site with the #DinalediVR experience. Ask them to think about their excavation in relation to the one they will experience in the VR headsets.

Post-VR Experience Discussion

- How did the team that discovered Homo naledi find these fossils?
- How did their excavation strategy differ from yours?
- What did they find?
- How do they know?
- What additional evidence would help them learn more about this species?

EXTENSIONS

1. Students can gain practice in graphing by producing a histogram of the items found during their excavation.
2. Students can perform additional research on the Homo naledi find. What have scientists postulated about this species' behavior. What evidence did the scientists use to draw this conclusion?

DEFINITIONS

Archaeological Site - Any place where human material remains are found; an area of human activity represented by material culture

Archaeology - The scientific excavation and study of ancient human material remains.

Artifact - A portable object manufactured, modified, or used by humans.

Excavation - The digging up and recording of archaeological sites, including uncovering and recording the provenience, context, and three-dimensional location of archaeological finds

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