

## LESSON PLAN

### Where Am I Supposed to Dig?

Estimated Time:	20-30 minutes	
Essential Question:	How do archaeologists decide where to excavate? What are the basic principles of archaeological fieldwork?	
<b>Vocabulary</b> Anthropology Archaeology Artifact Context Ecofact Excavation Hominin Site Survey Unit	<b>LEARNING OBJECTIVES</b>	
	Students will be able to: <ul style="list-style-type: none"> <li>• design a survey and excavation procedure for a mock paleoanthropological find</li> </ul>	
	<b>TEKS</b>	
	<b>SCIENCE</b>	<b>INVESTIGATION AND REASONING</b> <b>6.2B</b> design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;  <b>7.2B</b> design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;  <b>8.2B</b> design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology
<b>MATERIALS</b>		
Per Group	Per Student	
Graphing Paper Pencils Rulers *With Extension - Painter's tape and Measuring tape	Graphing paper Pencil Ruler	

## PROCEDURE

### Day 1:

#### Introduce students to the topic:

Finding a hominin fossil in the ground is exceptionally rare.

Of all of our human ancestors that once walked the earth, the remains of only a select few have managed to evade millennia of natural processes that threaten their preservation. These bones that do survive and enter the archaeological record are small, scarce and sometimes underground. Paleoanthropologists also find fossils that are visible on the surface from erosion. Even though the odds are not in their favor, paleoanthropologists continue to generate new finds and new information about our human past.

Where do they find these fossils? How do they decide where to search? How do they decide where to excavate? Once they do determine where the fossils might be, how and where do they dig the holes? Let's chat with our field team at Rising Star Cave to shed some light on this issue, but first, let's see if we can figure it out for ourselves.

(1) Inform students that some school employees have reported some very interesting rocks on the playground (or soccer field, school yard, parking lot...etc.). They think that the rocks may be bone, but they are unsure. They also do not remember where they found these rocks. There have been rumors of ancient hominin fossils on this school property, but no real evidence exists besides a couple of second-hand accounts.

(2) Explain to your students that they need to come up with a plan to find these potential bones and determine whether or not they are fossil material. They will need to be very organized, collaborative and efficient to locate the material before time (funding) runs out.

(3) Divide students into groups of 3-5 and tell them to come up with a plan. How will they find potential areas to excavate? How will they split up? Who will cover which areas? When they decide where they might want to dig, how will they do it? Which tools will they use? Provide graph paper for students to plot out a survey plan for the designated area.

### Day 2:

(1) Google Hangout with scientists and explorers from Rising Star cave in South Africa. If you cannot make a Google Hangout with the team, watch one of the recorded sessions online. Have your students ask them how they figure out where to excavate. See how their strategies compare to the students' methods. Is it similar? Different? If it is different, why is that? Does it have anything to do with the context of the finds (cave vs. field)?

EXTENSIONS	DEFINITIONS
<p>*If you have space available, actually place a 3D printed bone (or a substitute item) on the playground or soccer field, and have students implement their plan. Instruct students to place tape on the soccer field over the places that they would like to excavate. Time them to see if they can locate the bone and convince their funders that there is a need for further study and excavation.</p>	<p>See Teacher Supplement</p>
<p>Submitted by:</p>	<p>Andrew Montgomery, Science Communication and Outreach Fellow, Center for the Exploration of the Human Journey</p>