



Oh Deer!

Objectives

Students will

- Demonstrate how living things need food, water and shelter to thrive in an environment.
- Graph population changes over time based on data gathered and generated through the activity.
- Discuss the importance of balancing available resources with population needs.

Background

There are four things within an ecosystem that all living things need: food (energy source), water, shelter (protection from the elements) and space. All animals (humans included) need these four elements to live in an area. When there are enough of these resources in an environment, then populations increase. However, if just one of the elements is scarce, then populations decrease.

Pre-Visit Activities

Download the vocabulary building worksheets and have students complete the puzzles before their visit to the Cliff Dwellings. Don't have time for all three? The word search activity is recommended for lower elementary students; upper elementary students are encouraged to complete the crossword puzzle.

Program Outline

Deer & Resources –Students are divided into two groups: one group represents the deer population at the park, while the other represent available resources. How many deer will “live” to see another day?

Recording Keeping & Graphing – Based on the data collected during the Deer & Resource activity, students will construct a graph illustrating changes in deer population over time at the Cliff Dwellings. A discussion of different types of graphs and the purposes will take place.

Wrap-Up – Students will discuss how their needs for food, shelter, water and space are met. Consider scheduling a guided tour through the Cliff Dwellings and explore how people living in this area over 700 years ago met the these basic needs.

Extending the Experience

Incorporate one or both of this activities in your classroom to further your students' understanding of Gila Cliff Dwellings.

- Discuss with students that the Mogollon people left the cliff dwellings about 700 years ago. Based on what they learned during their visit, have students speculate why they might have left.
(*estimated time 45 minutes*)
Helpful Resource: Houk, Rose. *Mogollon*. Western National Parks Association, Tucson, Arizona, 1992.
- Have students compare the way the Cliff Dwellers met the basic needs with the way the students and their families find food, water, shelter and space today. Have older students write an essay on how they would meet their basic needs if they lived in the park. (*estimated time 45 minutes*)



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NEW MEXICO SCIENCE BENCHMARKS: *met or reinforced through this activity*

Standard I: BENCHMARK I

2.1 Conduct simple investigations.

Record Keeping & Game Play

2.3 Make predictions based on observed patterns as opposed to random guessing. *Graphing Activity*

2.4 Follow simple instructions for scientific investigation. *Record Keeping & Game Play*

3.3 Use numerical data in describing and comparing objects, events, and measurements.

Graphing Activity

3.4 Collect data in an investigation and analyze those data. *Record Keeping & Game Play*

4.3 Conduct multiple trials to test a prediction, draw logical conclusions, and construct and interpret graphs from measurements. *Record Keeping, Game Play & Graphing Activity*

5.3 Use graphic representations to present data and produce explanations for investigations. *Graphing Activity*

6.1 Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated. *Graphing Activity*

6.3 Justify predictions and conclusions based on data. *Graphing Activity*

Standard I: BENCHMARK II

2.2 Make accurate observations and communicate findings about investigations. *Record Keeping*

3.1 Use a variety of methods to display data and present findings. *Graphing Activity*

4.1 Communicate ideas and present findings about scientific investigations that are open to critique from others. *Graphing Activity*

Standard I: BENCHMARK III

2.1 Record observations on simple charts or diagrams. *Graphic Activity*

3.1 Use numerical data in describing and comparing objects, events and measurements. *Graphic Activity*

4.1 Conduct multiple trails using simple mathematical techniques to make (and test) predictions. *Game Play & Graphing Activity*

5.1 Use appropriate unites to make precise and varied measurements. *Graphic Activity*

5.2 Use mathematical skills to analyze data. *Graphic Activity*

5.3 Make predictions based on analyses of data, observations, and explanations. *Graphic Activity*

6.2 Use (probabilities,) patterns and relationships to explain data and observations. *Graphic Activity*

Standard II: BENCHMARK I

5.1 Identify the components of habitats and ecosystems. *Game Play & Wrap Up*

6.1 Understand how organisms interact with their physical environment to meet their needs. *Game Play & Wrap Up*

Standard II: BENCHMARK II

3.1 Identify how living things cause changes to the environments in which they live, and that some of these changes are detrimental to the organism and some are beneficial. *Game Play & Wrap Up*