

# *Walnut Canyon Web Quest*



## *Lesson Overview*

This lesson is designed to help teachers bring a little part of the National Park Service and one its unique monuments into the classroom, and hopefully inspire young students, their classes, and families to come and visit this park in person. After completing this lesson, teachers have the opportunity and are encouraged to plan a field trip to Walnut Canyon National Monument.

This web-based activity will walk the students through a virtual tour of many of the key natural and cultural sites around the monument while helping the students learn about the processes and history that makes this area so unique. Students will conduct an internet based inquiry investigation focusing on understanding how the plants, animals, people and places have shaped this unique place.

The web quest itself is broken up into 2 distinct investigations, one focused on looking at the people and places that formed Walnut Canyon's unique history, and the second focusing on the plants and animals that make this area home. Students will be given one of the 2 investigation sheets to complete at the computers, which will create the groups for part 2 of this lesson. For the second part of this lesson, students will group up based on which investigation they completed. In these groups, students will compare the answers they found, and then create a poster or whiteboard presentation that explains what they found in their investigation. These presentations can be as simple or detailed as the teacher would like to make them.

This lesson may work as a standalone lesson for students to "virtually" visit the monument without having to leave school, or can work well as a pre-field trip introduction.

## **Target Grade Level**

This lesson was designed for grades 5-12, but can be modified or adjusted to fit other grade levels depending on the students' level and proficiency with computers and the internet. This is left to the discretion of the teacher, and can also be used as a basic guideline for other grade levels and activities. For younger students, it is suggested that teachers focus on one webpage and modify the questions for the students' reading levels.

## **Duration**

Part One ~ 50 minutes on the computer.

Part Two ~ 50 minutes or more depending on detail of the presentation desired.

## **Objectives**

**Guiding Questions:** How has Walnut Canyon shaped the way of life for people throughout its history?

**Critical Content:** Learn how the terrain and contour of Walnut Canyon has shaped how plants, animals, and humans have lived in the canyon over time.

**Student Objectives:** Students will ...

- conduct an internet based inquiry investigation focusing on understanding how life has been shaped by Walnut Canyon.
- use critical thinking techniques to answer cultural and natural history questions.
- explore a National Monument using virtual technology.

## **Standards**

Common Core ELA Standards:

- SL.5.2; RST.6-12.3; RST.6-12.4
- W.5.7; WHST.6-12.6

Arizona State Science Standards:

- S1C1: Observations, Questions, and Hypothesis
- S1C3: Analysis and Conclusions: Organize and analyze data; compare to predictions
- S1C4: Communicate results of investigation.
- S1C2 PO1: Demonstrate safe and ethical procedures (e.g. use and care of technology, materials, organisms) and behavior in all science inquiry.
- S2C2 PO4: Describe how scientists continue to investigate and critically analyze aspects of theories.

Arizona State Social Studies Standards:

- Grade 6: S1C2 PO3a: Describe the cultures of the Mogollon, Ancestral Puebloans (Anasazi), and Hohokam: location, agriculture, housing, arts, and trade networks.
- S1C1: Research Skills for History.
- S1C1 PO4: Formulate questions that can be answered by historical study and research.
- S1C2 Early Civilizations. The geographic, political, economic, and cultural characteristics of early civilizations made significant contributions to the later development of the United States.
- S4C2: Places and Regions: Places and regions have distinct physical and cultural characteristics.
- S4C5: Environment and Society: Human and environmental interactions are interdependent upon one another. Humans interact with the environment – they depend upon it, they modify it, and they adapt to it. The health and well-being of all humans depends upon an understanding of the interconnections and interdependence of human and physical systems.

## **Lesson Prep**

- ~ Sign up for a day to use the computer lab.
- ~ Photocopy the worksheets (2) for the web quest.
- ~ Decide if the groups will be presenting from a poster or whiteboard.
- ~ Gather presentation materials and supplies.

## **Procedure:**

### **Part 1: Day 1**

Step 1: Divide the class into 2 groups. Each student will receive a computer lab worksheet that associates with that group and its primary question.

Step 2: Go to the computer lab. Students should work on answering the questions on their worksheet either individually or in partners. This is dependent on how many computers are available and up to the teacher's preference.

Step 3: Students will complete the worksheet, and explore the websites to gain knowledge and ideas to present to the class. Each student should focus on gathering information that gives detail about their topic.

### **Part2: Day 2**

Step 4: Students will group up in the classroom according to the worksheet they completed. In these groups students will need to compare the answers they got to the rest of their groups'. If the class is large and two groups aren't small enough, the class can be broken into four groups, with each group focusing on one topic: People, Places, Animals, or Plants.

Step 5: Hand out either whiteboards or poster paper and drawing materials to each group.

Step 6: As a group, students will create a presentation that explains and details out the information associated with their groups' worksheet. Post these additional topics somewhere on the board for the students to include in their presentations as well.

- ? Pick 2 specific questions your web quest and answer them.
- ? How does your virtual tour of Walnut Canyon's Trail to Water support your understanding of your group's topic/focus?
- ? Name one more interesting fact about Walnut Canyon that you learned during this investigation.

Step 7: Each group will present their findings to the class, and show their understanding of their primary topic. It is up to the teacher to decide how to grade these presentations, and how the students are made responsible for the information. It is recommended that students take notes.

Step 8: OPTIONAL but recommended. Take a field trip to Walnut Canyon National Monument!

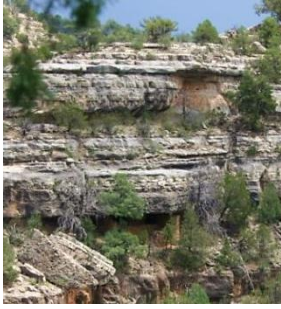
Step 9: OPTIONAL. As a class watch a short video that talks about the Trail to Water in more detail:

Video <<http://www.nps.gov/waca/photosmultimedia/multimedia.htm>>

## **Assessment:**

Students will complete a worksheet in the computer lab, and a group presentation to share their answers.

## **Site Visit:**



It is suggested that classes visit Walnut Canyon National Monument and compare what they saw in the web quest to what they can see at the monument itself. Walnut Canyon National Monument is a great place to see how people adapted and used the land and naturally occurring elements around them to make life possible. Check out the Visitor Center and see some of the tools used by the Ancestral Puebloan people, hike the trails down to some of the cliff dwellings, or hike the Rim Trail to view various plant and animal species around the canyon.

You may also contact the monument directly to see if there is any availability for a Ranger lead program that could focus on the people, places, plants, animals, or climate of Walnut Canyon.

## **Possible Extensions:**

- ~ Make a shoe box model of a cliff dwelling and life within Walnut Canyon.
- ~ Check out some of the virtual artifacts found on the Flagstaff Area National Monument's Webpage.
- ~ Check out some readings about the Ancestral Puebloan people and their decedents.

## **The Author:**

As part of the Teacher-Ranger-Teacher Program, through the National Park Service, and the America's Best Idea Grant, Amanda Stalvey was hired for the summer of 2013 to design and develop lesson plans that could bring the National Monuments around Flagstaff into the classroom, and spark interest to bring both classes and the community to the Parks. Amanda is a Flagstaff native who teaches science at Coconino High School and has a background in Natural Resource Management. The photographs depicted in this lesson are also taken and provided by Amanda Stalvey.

## **Appendixes:**

Below you will find the three worksheets for this activity.



Name: \_\_\_\_\_

Date: \_\_\_\_\_ Class: \_\_\_\_\_

# *Walnut Canyon Web Quest!*

## *Group 1: People and Places*

Make sure to read and follow the directions for each section of this web quest carefully and answer the questions for each page that you navigate to. The more detailed your answers the better!

**Start at [www.nps.gov/waca/forteachers/classrooms/walnut-canyon-web-quest-groups.htm](http://www.nps.gov/waca/forteachers/classrooms/walnut-canyon-web-quest-groups.htm)**

Find the “Walnut Canyon Web Quest” and click on the link titled “People” listed under Group 1.

1. Who were the first permanent inhabitants, who flourished in the region from about C.E. 600 until 1400?

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2. Many of the artifacts around Walnut Canyon have been taken and cultural sites damaged. Who caused this damaged and loss of history? Why is this considered such a travesty?

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3. Use the information from this page and the space below to create a rough timeline of the people who have lived and/or impacted Walnut Canyon National Monument throughout history.



4. Look at the Michael Hampshire recreation of what life in a Walnut Canyon cliff dwelling might have been like. What do you observe in this picture? What challenges to life do you see?

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**Look to the left column of this page, and find the sub-heading “Places”. Click on the heading to go to the next page. You can also return to your group’s links and click on the link titled “places”.**

5. Scientists find fossils of marine life in the limestone ledges of Walnut Canyon. What does this tell you about this area, and Arizona?

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6. Describe what the people who lived in this canyon would have used for food, and clothing, and how they got these things.

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**Go back to the NPS website page with your group’s links.**

Click on the link titled “Virtual Trail”.

Navigate through this page. Try looking all around each point along the trail; be careful you might make yourself dizzy! Your group’s questions focus on looking at how life would have been like in the canyon.

7. Why is this trail not open to the public? How does this fit in with what you learned from the “People” section of this web quest?

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8. From the “Visitor Center View Point” you can see a cliff dwelling across the canyon. What natural obstacles do you notice that might have made life in the canyon difficult for the people here?

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9. Look closely at the cliff dwelling that the trail takes you into. What observations about life can you make from this 360° tour?

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**If you finish early, explore the rest of Walnut Canyon’s website.**



Name: \_\_\_\_\_

Date: \_\_\_\_\_ Class: \_\_\_\_\_

# Walnut Canyon Web Quest!

## Group 2: Animals and Plants

Make sure to read and follow the directions for each section of this web quest carefully and answer the questions for each page that you navigate to. The more detailed your answers the better!

**Start at [www.nps.gov/waca/forteachers/classrooms/walnut-canyon-web-quest-groups.htm](http://www.nps.gov/waca/forteachers/classrooms/walnut-canyon-web-quest-groups.htm)**

Find the “Walnut Canyon Web Quest” and click on the link titled “Animals” listed under Group 2.

1. What is it about Walnut Canyon that makes it so rich in wildlife? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Name 5 species of wildlife you may find in Walnut Canyon. Choose wisely because you will have to use these 5 animals later in this web activity.

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\_\_\_\_\_

**Look to the left column of this page, and find the sub-heading “Plants”. Click on the heading to go to the next page. You can also return to your group’s links and click on the link titled “Plants”.**

3. What is the primary factor affecting the terrain and vegetation around the Flagstaff Area National Monuments, and the land between Flagstaff and the Grand Canyon?

\_\_\_\_\_  
\_\_\_\_\_

4. Describe the differences in terrain and plant communities between the north slope, south slope, and bottom of Walnut Canyon.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Name 3 species of plant you will see at Walnut Canyon. \_\_\_\_\_  
\_\_\_\_\_

**Look to the left column of this page, and find the sub-heading “Environmental Factors”. Click on the heading to go to the next page. You can also return to your group’s links and click on the link titled “Environmental Factors”.**



5. What have been the biggest human factors that have altered Walnut Canyon’s landscape? How have these activities affected Walnut Canyon?

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**Go back to the NPS website page with your group’s links.**

Click on the link titled “Virtual Trail”.

Navigate through this page. Try looking all around each point along the trail; be careful you might make yourself dizzy! Your group’s questions focus on looking at how life would have been like in the canyon.

6. Go back to your list of animals from question #2. Describe where along this trail you would find 3 of these animals living and why they would be there.

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7. As you descend into the canyon along the trail, where are the plants you identified in question #5? What part of the canyon do they grow?

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8. How would the areas where these plants and animals occur along the canyon have influenced the way of life for the people living in Walnut Canyon 800 years ago?

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9. How has the dam at Lake Mary affected the water flow and plant life in Walnut Canyon?

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**If you finish early, explore the rest of Walnut Canyon’s website.**