

# ARABIA MOUNTAIN U. S. HISTORY INVESTIGATION

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# 2009



An investigation of the effects of urban sprawl on the environment, community, and animals.

<b>Title</b>	<b>Schoolyard Investigation on the effect of Urban Sprawl or the construction of buildings (homes, buildings, etc.) on the environment, the community, and animals</b>
<b>Age Group</b>	<b>11th Grade</b>
<b>Lesson Duration</b>	<b>3 days</b>
<b>Year</b>	<b>Fall 2009</b>
<b>Cost</b>	<b>\$20.00 or less</b>

### **Background**

For this investigation, students will investigate the effect of building Arabia Mountain High school on the community, environment, and animals. The data gathered from this investigation will be compared to data collected earlier from an analysis of the effect of the settlement of Europeans in Jamestown on the community, environment, and animals.

The Arabia Mountain investigation will take place over a three day period. There are 5 classes involved in the investigation. The internet and a book entitled “The Mayflower” will be the source of data gathered for the Jamestown settlement investigation.

For the purpose of this investigation, only the Arabia Mountain investigation will be documented.

Students will imagine that they are living in the 17<sup>th</sup> century. The students have just landed in the area and have cleared the land to set up their settlements. Students will determine how has their settlements at Arabia Mountain High School has affected the natives, environment, and the local animals.

### **Standard:**

State of Ga. #SSUSH1- The student will describe European settlement in North America during the 17<sup>th</sup> century

### **Learning Goals**

- Record data in a log
- Create a physical map of an area
- Ask scientific and historical questions based on observation and research
- Explain verbally and nonverbally to others how to solve a problem
- Use technology to communicate his or her findings
- Understand cause and effect

## Enduring Understanding

- Understand that the actions of individuals, groups, and/or institutions affect society and the environment through intended and unintended consequences

## Materials:

- Map of the 13 British colonies
- Blank 8 ½ blank poster paper
- Textbook
- Computer w/internet & PowerPoint
- Google Earth <http://earth.google.com/>
  - Topographic maps
  - Quad Map
  - Aerial photos
- County Maps (to be obtained)
- Post-It Paper
- Note book
- 3 parents and or community partners

\*Maps display school before and after school was built

## Student – Generated Inquiry Questions

What animals are affected by removing vegetations and trees?

What is the affect of introducing new vegetations to the school ground?

Did the removal of the trees affect the temperature in the area?

What did the increase of motor vehicles and the release of carbon dioxide have on the remaining habitat?

What happened to the animals that were living here prior to building the school?

Was the amount of traffic to other school decrease by building this school?

Did it create opportunities for students to be involved in activities that they may not have been involved at other schools?

Were there jobs created as a result of building this school?

Did the building of the school provide opportunities to learn more about “going green”?

How has the building of this school affected the community (people)?

Has the building of this are affected the climate?

Was there a change in runoff and the natural drainage system?

## **Sample Hypothesis & Prediction**

Constructing Arabia Mountain High School has some affect on the community, animals, and the environment.

I expect that the students will develop three or more aspects (predictions) that will have an affect on the community, animals, and the environment.

## **Predictions**

If urban sprawl or constructing buildings (school, homes, etc.) has some effect on the community, animals, and environment at Arabia Mountain then there will be:

- Positive or negative affect on the community
- Positive or negative affect on wildlife habitats
- Rise or fall in temperature in the area
- Increases or decreases in the amount of traffic in the immediate and surrounding areas

## **Additional Investigation:**

I expect the students to connect aspects of the building and its certification as a LEED school to positive affects of the building.

## **Procedures:**

### **Pre-Investigation**

- Divide the students into 4 groups of 6.
- Discuss the environment and some of the factors that may negatively and positively affect the environment and its inhabitants.
- Define community.
- Students will write and discuss questions on the environment, the community, and animals.
- Guide students to make a decision on which question that may lead to an investigation
- Use Google Earth, local, topical, and quad maps and pictures of the school before and after the completion of the building.
- Agree on the length of time for each activity in the investigation.
- Arrange a visit to the school yard for the volunteers.

## Day One

- Use Google Earth and other maps and pictures to investigate appearance of Arabia Mountain High School before and after completion of the building. Take notes.
- In groups of 6, students will walk the campus (45min.) with their volunteer or teacher to draw a map of the schoolyard w/key. Each group will start at a different location in the school yard. Make note of what is seen and not seen.
- Explain the importance of staying out of the natural environmental areas. Use sidewalks as much as possible.
- In the last 10 min of class, students will write a reflection of the day's activities.

**Homework: Read** (Use this web address to access the article, "[Depletion and Conservation of Natural Resources - The Role Of Forests And Habitat.](http://www.libraryindex.com/pages/1157/Depletion-Conservation-Natural-Resources-ROLE-FORESTS-HABITAT.html)") **Be prepared to discuss** <http://www.libraryindex.com/pages/1157/Depletion-Conservation-Natural-Resources-ROLE-FORESTS-HABITAT.html>

## Day 2

- Students will discuss findings of the map exercise and the maps. Review the differences between what was there before and after the building of the school.
- Students will compare the data gained from the analysis of the effect of the settlement of Europeans in Jamestown on the community, environment, and animals.
- Students will decide on the mode of presentation and design their presentations.

## Day 3

- Groups will present findings in the form of Post-Its or PowerPoint (10 min each)
- Debrief (discuss the activity and how students felt about the process)

**Resources:**

<http://www.libraryindex.com/pages/1157/Depletion-Conservation-Natural-Resources-ROLE-FORESTS-HABITAT.html> **Depletion and Conservation of Natural Resources - The Role Of Forests And Habitat**

<http://visitwilliamsburg.com/williamsburg-attractions/jamestown-settlement/index.aspx>

<http://www.carryingcapacity.org/DinAlt.htm>

[http://www.eduref.org/Virtual/Lessons/crossroads/sec5/Unit\\_02/Unit\\_02L1.html#Objectives](http://www.eduref.org/Virtual/Lessons/crossroads/sec5/Unit_02/Unit_02L1.html#Objectives)

<http://ilbi.org/the-standard/lbc-v1.3.pdf> **“The Living Building”**

**Evaluation: Presentation Rubric Attached**

# *U. S. History*

Title of Report \_\_\_\_\_

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Introduction	Does not give any information about what to expect in the report.	Gives very little information.	Gives too much information--more like a summary.	Presents a concise lead-in to the report.	
Research	Does not answer any questions suggested in the template.	Answers some questions.	Answers some questions and includes a few other interesting facts.	Answers most questions and includes many other interesting facts.	
Purpose/Problem	Does not address an issue related to the topic.	Addresses the topic issue which is unrelated to research.	Addresses an issue somewhat related to research.	Addresses a real issue directly related to research findings.	
Procedure	Not sequential, most steps are missing or are confusing.	Some of the steps are understandable; most are confusing and lack detail.	Most of the steps are understandable; some lack detail or are confusing.	Presents easy-to-follow steps which are logical and adequately detailed.	
Data & Results	Data table and/or graph missing information and are inaccurate.	Both complete, minor inaccuracies and/or illegible characters.	Both accurate, some ill-formed characters.	Data table and graph neatly completed and totally accurate.	
Conclusion	Presents an illogical explanation for findings and does not address any of the questions suggested in the template.	Presents an illogical explanation for findings and addresses few questions.	Presents a logical explanation for findings and addresses some of the questions.	Presents a logical explanation for findings and addresses most of the questions.	
				Total	