

# Northwest History Consortium

## **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

**Eleanor (DiDi) Funk**

**5<sup>th</sup> Grade**

**National Standard**

**Era 1 / Standard 1**

**Washington State**

**History Standards**

Washington State Essential Academic Learning Requirements that could be covered through this lesson are:

- 3.1** Understands the physical characteristics, cultural characteristics, and location of places, regions, and spatial patterns on the Earth's surface
- 3.2** Understands human interaction with the environment
- 4.1.2** Understands how the following theme and development help to define eras in U.S. history from time immemorial to 1791 through development of indigenous societies in North America
- 4.2.2** Analyzes how people from various culture groups have shaped U.S. history
- 4.3** Understands that there are multiple perspectives and interpretations of historical events
- 4.4** Uses history to understand the present and plan for the future
- 5.1** Uses critical reasoning skills to analyze and evaluate positions
- 5.2** Uses inquiry-based research
- 5.4** Creates a product that uses social studies content to support a thesis, and presents the product in an appropriate manner to a meaningful audience

**Science Standards**

Washington State Essential Academic Learning Requirements that could be covered through this lesson:

- 1.1.5** Nature and Properties of Earth Materials
- 1.1.6** Characteristics of Living Matter
- 1.2.1** Earth/Space and Living Systems
- 1.2.2** Energy Transfer and Transformation
- 1.2.3** Structure of Matter
- 1.2.5** Components of the Solar System and Beyond
- 1.2.6** Structure and Organization of Living Systems
- 1.2.8** Human Biology
- 1.3.5** History and Evolution of the Earth
- 1.3.6** Hydrosphere and Atmosphere
- 1.3.7** Interactions in the Solar System and Beyond

# Northwest History Consortium

## **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

**1.3.8** Life Processes and the Flow of Matter and Energy

**1.3.9** Biological Evolution

**1.3.1** Interdependence of Life

**2.1.1** Questioning

**2.1.2** Planning and Conducting Safe Investigations

**2.1.4** Modeling

**2.1.5** Communicating

**2.2.1** Intellectual Honesty

**2.2.2** Limitations of Science and Technology

**2.2.3** Evaluating Inconsistent Results

**2.2.4** Evaluating Methods of Investigation

**2.2.5** Evolution of Scientific Ideas

**3.1.1** Identifying Problems

**3.2.1** All peoples contribute to Science and Technology

**3.2.2** Relationship of Science and Technology

**3.2.4** Environmental and Resources Issues

### **PROBLEM**

Did historical peoples have an impact on their surrounding or were they environmental saints?

Do we have an impact on our surroundings? Is it “good” or “bad”?

Can we shape the future of our environment? How?

The students will learn, through their research, about the Native American groups that populated North and Central America pre-contact and the different environments that comprised their homes. They will also understand that just as Native Americans had a positive or negative affect on the environment in which they lived, we, as modern peoples, also contribute to or change our environment.

## Northwest History Consortium

### Native Americans and Their Environments A Social Studies and Science Lesson in Progress

#### SCENARIO

#### Survivor

You and three or four other students will get aboard a time machine and will be dropped, with only the clothes you have on, into a part of North or Central America and into a time about 500 years ago. You will need to find out how to obtain the necessities of life from the surroundings in which you have been dropped. You will also need to get to know the native population so that you can learn from them.

What do you need to know about the following in order to survive?

- The *people* who live there and how to communicate with them
- *Plants and animals*—which ones to use and how, which ones to be careful of
- *Weather*
- *Transportation*
- *Shelter*
- *Cultural highlights*

Can the people who live in this biome change it in any way?

The Native American groups that will host survivor contestants are:

- Arctic
- Pacific Northwest Coast
- Plains
- Southwest
- Eastern Woodlands
- Central American

#### TASK(S)

You need to find out everything you can about the area in which you were dropped. Keep track of all you learn and observe in your journal, so that **if** you survive you can teach others about your experience.

Using a medium of your choice, you and your group need to teach the rest of the survivors how to survive in the same environment, so that they could survive if they were “dropped” there.

- Note: Student groups could practice their presentations with one other group to receive feedback before presenting to the whole class.

While the history/social studies research is going on the students will design and complete an experiment growing grass in small cups, using the inquiry method and the attached Science Form. The manipulated variable will be the amount of fertilizer in each cup.

# Northwest History Consortium

## **Native Americans and Their Environments** A Social Studies and Science Lesson in Progress

### RESOURCES

### Science Form

#### Brainstorm

Things I could change or vary:

Things I could measure or observe:

#### Choosing Variables

I will change one variable.

I will measure or observe one variable.

I will keep everything else the same.

#### Ask a Question

What is the effect of the \_\_\_\_\_ (changed variable) on the \_\_\_\_\_ (measured variable)?

Or the question can be written:

How does the \_\_\_\_\_ (changed variable) affect the \_\_\_\_\_ (measured variable)?

#### Prediction

Note: At this point you **must** support your prediction with a scientific explanation. This is **really** what is being tested by the experiment!

As the \_\_\_\_\_ (changed variable) increases or decreases (circle one), the \_\_\_\_\_ (measured variable) increases or decreases (circle one) because \_\_\_\_\_

\_\_\_\_\_.

#### Design An Experiment

Make sure to include the following parts:

1. Your question
2. Your prediction
3. Your experiment (or research) is designed to answer your question.
4. Step-by-step procedures (Someone else needs to be able to repeat your experiment.)

# Northwest History Consortium

## **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

5. Three variables listed (changed, measured, and kept the same); **grades 6 & up** (manipulated, responding, and controlled)
6. Materials list
7. Safety rules
8. Your data record
9. Trials repeated at least three times for validity

### **Table of Results**

Note: This is where your raw data goes.

The collected data can be recorded in many ways. It can go directly into a science journal, notebook, or on paper. It saves a step if the researcher has a raw data table already prepared to record the data.

### **Raw data table**

Note: 5<sup>th</sup> grade WASL allows up to 12 data cells.

	[Title]		
Results from:	Trial #1	Trial #2	Trial #3
Starting data:			
1 week:			
2 weeks:			
3 weeks:			

### **Graph of results**

Note: When dealing with an experimental design, use a *bar graph* if your changed variable is expressed in *words*; use a *line graph* if your changed variable is expressed in numbers.

The Changed Variable goes on the X-axis.  
The Measured Variable goes on the Y-axis.

### **Conclusion**

When I changed \_\_\_\_\_ (changed variable), this is what happened to \_\_\_\_\_ (measured variable) **because** \_\_\_\_\_

\_\_\_\_\_.

This means that my prediction was (choose one and circle it)      **correct**      **incorrect**.

Do you need to build a new experiment? If so, go back and select a new variable to change and start again. You need to start with brainstorming new variables.

## Northwest History Consortium

### **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

#### **Sources**

Books from the research shelf, selected by the teacher and the librarian.

Gurterba, Linda. "Native Americans." KidInfo.com. 2008. 5 June 2009  
<[http://www.kidinfo.com/american\\_history/native\\_americans.html](http://www.kidinfo.com/american_history/native_americans.html)>.

Hakim, Joy. A History of the US: 11 Volume Set. New York: Oxford University Press, 2002.

"Native Americans." Info.com. 2009. Chicago, IL. 5 June 2009 <[http://www.info.com/native\\_americans?cb=27&cmp=3920&glid=CPmdtp](http://www.info.com/native_americans?cb=27&cmp=3920&glid=CPmdtp)>.

Mitchell, Kathi. "Mrs. Mitchell's Virtual School." Kathimitchell.com. 1997-2009. Concord, NH. 5 June 2009 <<http://www.kathimitchell.com/natam.htm>>.

#### **ASSESSMENT**

Formative assessments will be conducted often and on varied parts of the PBL. The students will assess each other as individuals and as group members with the assistance of a rubric on group contributions and pass those assessments in to the teacher.

They will also have a rubric to use as they put their history presentation together, and the teacher will be using a science lab behavior and content rubric as the science part of the PBL progresses.

For the summative assessment each student will receive a set of two questions. Using their notes from the oral history presentations and science investigation, they will answer the questions. They will use appropriate vocabulary and any other knowledge gained through their research. The student may or may not receive questions about the Native American group and environment on which they did the actual research.

Note: Each student will receive a rubric for the summative assessment at the beginning of this PBL.

**Instructions:** Using your notes from all of the oral presentations and the knowledge you gained from the science experiment, please answer the following questions. Be sure to support your answer with examples. These questions are to be answered at school, but they may take more than one day to complete.

#### **Question Set 1**

What would happen if the Native Americans living in the deserts of the southwest put in an extensive irrigation system? Why would this event be considered "good" or "bad"?

## Northwest History Consortium

### **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

#### **Question Set 2**

What would happen if a small tribe in the Pacific Northwest had a potlatch during an unusually hot summer and hundreds of people came who were using the same “facilities”? Why would this be considered “good” or “bad”?

#### **Question Set 3**

What would happen if an Arctic people went against tradition and hunted the first group of migrating caribou?

Note: The elders determine when enough of the caribou herd has come through the area to lay down the scent trail for the groups that follow. When enough animals have come through, perhaps as many as 100,000 animals, they allow the hunters to go to work.

Why would this event be considered “good” or “bad”?

#### **Question Set 4**

What would happen if an Eastern Woodlands group set fire to the forest to clear the land so that more grass would grow? Would this event be considered “good” or “bad” and why?

#### **Question Set 5**

What would happen if a tribe in the Plains area ran a whole herd of buffalo off a cliff and the entire herd perished? Why would this event be considered “good” or “bad”?

#### **Question Set 6**

What would happen if the hunters and gatherers of Central America began to grow maize, squashes, and beans to expand their food supply? Why would this event be considered “good” or “bad”?

## Northwest History Consortium

### **Native Americans and Their Environments** **A Social Studies and Science Lesson in Progress**

#### REFERENCES/CITATIONS

Funk, Eleanor. "Native Americans and Their Environments – 5<sup>th</sup> Grade." NWESD Organization. 2008. Anacortes, WA. 5 June 2009 <[http://www.nwesd.org/1510101216191755740/lib/1510101216191755740/1.1\\_NativeAmericans.Environment.Funk.5.pdf](http://www.nwesd.org/1510101216191755740/lib/1510101216191755740/1.1_NativeAmericans.Environment.Funk.5.pdf)>.

Funk, Eleanor. "Science Form." NWESD Organization. 2008. Anacortes, WA. 5 June 2009 <[http://www.nwesd.org/1510101216191755740/lib/1510101216191755740/1.1\\_NativeAmericans.Environment.Funk.5.pdf](http://www.nwesd.org/1510101216191755740/lib/1510101216191755740/1.1_NativeAmericans.Environment.Funk.5.pdf)>.

"History Standards for Grades 5-12 United States." UCLA National Center for History in The Schools. 2009. University of California, Los Angeles, CA: 31 May 2009 <<http://nchs.ucla.edu/standards/era1-5-12.html>>.

OSPI. "Social Studies Essential Learning Requirements: Recommended Grade-by-Grade Sequence for Grade Level Expectations – K-12." Office of Superintendent of Public Instruction. 2009. Olympia, WA. 5 June 2009 <<http://www.k12.wa.us/SocialStudies/pubdocs/FinalDocument-SocialStudiesGLEs-GradesK-12-12-1-08.pdf>>.