

One Week Unit

Class: Social Studies/History, Science & Technology

Unit: The Effect of Westward Expansion on the Environment

Grade Level: 7th and 8th

Curriculum Standards: Social Studies/History

Political Democratization, Westward Expansion, and Diplomatic Developments, 1790-1860

USI.22 Summarize the major policies and political developments that took place during the presidencies of George Washington (1789-1797), John Adams (1797 – 1801), and Thomas Jefferson (1801 – 1809). (H,C)

USI.26 Describe the causes, course, and consequences of America's westward expansion and its growing diplomatic assertiveness. Use a map of North America to trace America's expansion to the Civil War, including the location of the Santa Fe and Oregon trails. (H,E,G)

- F. the concept of Manifest Destiny and its relationship to westward expansion
- G. the acquisition of the Oregon Territory in 1846
- I. the search for gold in California

Concepts and Skills:

1. Apply the skills of prekindergarten through grade seven.
4. Interpret and construct charts and graphs that show quantitative information. (H,C,G,E)
5. Explain how a cause and effect relationship is different from a sequence or correlation of events. (H,C,E)
6. Distinguish between long-term and short-term cause and effect relationships. (H,G,C,E)
7. Show connections, causal and otherwise, between particular historical events and ideas and larger social, economic, and political trends and developments. (H,G,C,E)
9. Distinguish intended from unintended consequences. (H,E,C)

Curriculum Standards:

Science & Technology

Learning Strand 2: Life Science (Biology)

The life sciences investigate the diversity, complexity, and interconnectedness of life on earth.

Classification of Organisms

- 1. Classify organisms into the currently recognized kingdoms according to characteristics that they share. Be familiar with organisms from each kingdom.

Evolution and Biodiversity

- 12. Relate the extinction of species to a mismatch of adaptation and the environment. (Relate how numerous species could not adapt to habitat destruction and over killing by humans)

Living Things and Their Environment

- 13. Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.

Changes in Ecosystems Over Time

17. Identify ways in which ecosystems have changed throughout geologic time in response to physical conditions, interactions among organisms, and the actions of humans. Describe how changes may be catastrophes such as volcanic eruptions or ice storms.

Learning Strand 4: Technology/Engineering

Science tries to understand the natural world. Based on the knowledge that scientists develop, the goal of engineering is to solve practical problems through the development or use of technologies...

In grades 6-8, students pursue engineering questions and technological solutions that emphasize research and problem solving...

- **1.1 Materials, tools and Machines**

Given a design task, identify appropriate materials (e.g., wood, paper, plastic aggregates, ceramics, metals, solvents, adhesives) based on specific properties and characteristics (e.g. weight, strength, hardness, and flexibility).

- 1.2 Identify and explain appropriate measuring tools, hand tools, and power tools used to hold, lift, carry, fasten and separate, and explain their safe and proper use.
- **Engineering Design:** Broad Concept: Engineering design is an iterative process involving modeling and optimizing for developing technological solutions to problems within given constraints.
- 2.1 Identify and explain the steps of the engineering design process, i.e., identify the need or problem, research the problem, develop possible solutions, select the best possible solution(s), and redesign.
- **Construction Technologies:** Broad Concept: Construct technology involves building structures in order to contain, shelter, manufacture, transport, communicate, and provide recreation.
- 5.1 Describe and explain parts of a structure, e.g. foundation, flooring, decking, wall roofing systems.
- 5.2 Identify and describe three major types of bridges (e.g., arch, beam, and suspension) and their appropriate uses (e.g., site, span, resources, and load).
- **Transportation Technologies:** Broad Concept: Transportation technologies are systems and devices that move goods and people from one place to another across or through land, air, water, or space.
- 6.2 Given a transportation problem, explain a possible solution using the universal systems model.

Topic: The Effect of Westward Expansion on The Environment

Statement of Purpose: The purpose of this unit is to help students understand the cause and effect relationship of westward expansion on the environment. Students will investigate and the impact of the discovery of gold in California and the far reaching consequences of settlement in the west on entire ecosystems in the lands west of the Mississippi River. Using maps, both political and topographic, timelines, internet resource sites, and primary source material, students will investigate the effect of gold mining, open range grazing, and farming techniques on ecosystems.

Lesson #1: Lewis & Clark Journey of Exploration

Learning Objectives

Students will:

- Identify the route taken by Lewis & Clark
- Develop research skills
- Utilize primary and secondary source material
- Employ critical thinking skills to determine cause and effect relationships
- Utilize mapping skills

Schedule: Materials and Time

Time: 2 – 45 minute class periods

Activity:

Introduction: In this lesson students will create maps showing the route taken by Lewis & Clark in their journey of exploration. These maps will identify the area where a new species of plant or animal was first identified. Students will identify the biome classification associated with the species. Students will then determine the status of these species today. By comparing data, students will discuss possible causes of population changes.

Setting up the class:

Divide the class into 6 research groups: Mammal, Bird, Fish, Reptile, Herbaceous and Woody Plant. Members of each group will be given a “Species Worksheet”, an outline map and a list of website resources. Students will each receive a copy of the “Map Rubric” and “Worksheet Rubric”. Each group will complete the following tasks:

1. Research the pathway of the Lewis and Clark Expedition and trace that pathway on a blank outline map.
2. Complete the “Species Worksheet”
3. Using primary and secondary source material, locate on their map the area where each of their assigned species was first identified by Meriwether Lewis
4. With other species groups, create a large classroom map detailing the location of discovery for all species recorded by Meriwether Lewis
5. Using website resources, identify the status of their assigned species today.

Concluding this lesson:

Class discussion:

- What are some factors that could have influenced the population of species identified by Meriwether Lewis
- How did Euro-American settlement differ from Native American occupation of the land?
- What do you think has made the greatest impact on the habitats of the studied species?

Assessment:

- Map Rubric
- Worksheet Rubric
- Rubric for Collaborative Groups
- Rubric for Oral Reports

References:

Journals of the Lewis & Clark Expedition
<http://libtextcenter.uni.edu/index.html>

Lewis & Clark Expedition
Best of History Websites
<http://www.americanwest.com>

Lewis & Clark Journey of Discovery
Jefferson National Expansion Memorial
<http://www.nps.gov/jeff/LewisClark2/HomePage/HomePage.htm>

Lewis & Clark on the Information Superhighway
www.vpds.wsu.edu/lcexpedition/resources

Lewis and Clark's Corps of Discovery Great Falls, Montana
www.corpsofdiscovery.org/honor.htm

The Journey of the Corps of the Discovery
www.pbs.org/lewisandclark

Peabody Museum of Archaeology and Ethnology at Harvard University
www.peabody.harvard.edu/Lewis&Clark

American Indians and the Natural World
Carnegie Museum of Natural History
www.clpgh.org/cmnh/exhibits/north-south-east-west/index.html

Endangered Species
www.endangeredspecie.com/kids.htm

National Wildlife Federation's Animal Tracks
www.nwf.org/nwf/kids/

Discovery Channel's Otter Site
www.discovery.com/stories/nature/otters/otters.html

National Geographic's Underdogs: Prairie Dogs at Home
www.nationalgeographic.com/features/98/burrow

The Bear Den
www.nature.net.com/bears

Wolves on the Web
www.wolves-on-web.com

Maps:

Outline Map of U.S.

<http://z.about.com/d/geography/1/0/9/H/usa3.jpg>

Lewis & Clark Journals

<http://libtextcenter.uni.edu>

Jefferson National Expansion Memorial

<http://www.nps.gov/jeff>

Books:

Herbert, Janis. Lewis and Clark for Kids. Chicago: Chicago Review Press, Inc.2000

Milner, Clyde A. II, et al. Major Problems in the History of the American West. Boston: Houghton Mifflin Company. 1997.

STUDENT DIRECTION SHEET

LEWIS & CLARK EXPEDITION

1. The class will be divided into six groups for this research project.
2. Each group will be given a specific species that was documented for the first time during the Lewis & Clark Expedition.
3. Each group will be given a black outline map of the present day boundaries of the United States.
4. Your group will research the websites listed in the reference page
5. You will complete the "Species worksheet,"
6. Using your completed "Species worksheet" you will indicate on your outline map the location where your species was first cited.
7. Compare lists of extinct or endangered species, with the list of species discovered on the Lewis & Clark Expedition.
8. Your group will prepare and present an oral presentation to the class on the number and kind of species no longer found in the area of exploration. This oral presentation will be no less than three minutes, nor longer than five minutes, and all members in your group will participate. Your group will use the map you created as a visual for your presentation.

Rubric for Collaborative Groups

Category	4	3	2	1	Rating
Contributions	Routinely provides useful ideas when participating in a cooperative group. A definite leader who contributes a lot of effort	Usually provides useful ideas when participating in a cooperative group; a strong member who tries hard	Sometimes provides useful ideas when participating in a cooperative group exercise; group member who does what is required	Rarely provides useful ideas when participating in a cooperative group; may refuse to participate or be helpful in any way	
Quality of Work	Provides work of the highest quality	Provides high quality work	Provides work that occasionally needs to be checked/or redone by other group members to ensure quality	Provides work that usually needs to be checked/redone by others to ensure quality	
Time Management	Routinely uses time well; neither timeline nor work responsibilities have to be adjusted because of this student's procrastination	Usually uses time well throughout the project; neither timeline nor work responsibilities have to be adjusted because of this student's procrastination	Tends to procrastinate but always gets things done by the deadline; timelines and work responsibilities do not have to be adjusted because of this student	Rarely gets things done by the deadlines and group has to adjust deadlines and work responsibilities because this student's lack of time management	
Focus on Task	Constantly stays focused on topic and task and what needs to be done; very self-directed.	Focuses on the topic and task and what needs to be done most of the time; other members of the group can count on this person	Focuses on the topic and task and what needs to be done some of the time; other group members must sometimes nag, prod, and remind to keep this student on task	Rarely focuses on the topic or task and what needs to be done; lets others do the work	
Pride and Attitude	Work reflects student's best efforts; never publicly critical of the project or the work of others; always has a positive attitude about the task(s)	Work reflects a strong effort; rarely is publicly critical of the project or the work of others; often has a positive attitude about the task(s)	Work reflects some effort from the student; occasionally is publicly critical of the project or work of other members of the group; usually has a positive attitude	Work reflects very little effort on the part of the student; often is publicly critical of the project or other members of the group; often has a negative attitude about the task(s)	
Working with Others	Almost always listens to , shares with, & supports the efforts of the others in the group; tries to keep people working together	Usually listens to, shares with, and supports the efforts of the other members of the group; does not cause "problems" within the group	Often listens to, shares with, & supports the efforts of the other members of the group: sometimes does not practice team work	Rarely listens to, shares with, or supports the efforts of the other members of the group; does not practice team work	

Teacher's Comments: _____

Rubric for Maps

Category	4	3	2	1	Rating
Neatness	Map is crystal clear, latitude & longitude coordinates are clearly marked; geologic boundaries are present with appropriate symbols; lines are dark; species are indicated, dates of discovery are indicated; no stray pen or pencil marks; overall appearance shows care and attention to detail. Map legend is color coded,	Map is clear, latitude & longitude coordinates are clearly marked; geologic boundaries are present with appropriate symbols; species are indicated; dates of discovery are indicated; lines could be darker; a few stray pen or pencil marks; overall appearance shows care and attention to detail; Map legend is clear	Map lacks clarity; latitude & longitude coordinates are unclear or missing; geologic boundaries are missing or not labeled; species are missing; date of discovery is missing or incorrect; many extraneous marks; overall appearance lacks care. Map legend is present, but symbols are not clear	Map is messy, lacks clarity; many extraneous marks; overall appearance shows lack of care. latitude/longitude coordinates are missing or inaccurate; geologic boundaries are missing, not labeled or inaccurate; legend is missing/confusing	
Completeness	Latitude & longitude coordinates are clearly marked; geologic boundaries are clearly marked and labeled, species are clearly marked and labeled as to when they were discovered; legend is clear and accurately reflected on the map	Latitude & longitude coordinates are marked; species are marked and labeled as to when they were discovered; geologic boundaries are present, but some are not labeled; legend is present and mostly reflected on the map	Latitude & longitude coordinates are missing; species are missing or incorrectly marked as to when and where they were first discovered;; geologic boundaries are mostly present, but some are missing; legend is present	The map has so many errors and missing data that it does not have meaning.	
Accuracy	Latitude & longitude boundaries are clearly outlined and labeled accurately; all geologic boundaries are accurately labeled and in the appropriate place; population has been indicated in a logical and appropriate manner; legend is present with clearly marked symbols that are reflected on the map	Latitude & longitude boundaries are outlined and accurate; almost all geologic boundaries are accurately labeled and in the appropriate place; population has been indicated in an appropriate manner; legend is present with clearly marked symbols that are reflected on the map	Latitude & longitude boundaries are outlined, but there are some inaccuracies; some geologic boundaries are present, but there are some inaccuracies; legend is present, but there is some confusion in comparing the legend with the map	Latitude & longitude boundaries are missing/inaccurate; geologic boundaries are missing and/or not labeled; many inaccuracies; legend is missing/confusing	

Teacher's Comments: _____

Rubric for Worksheets

Category	4	3	2	1	Rating
Time and Effort	Class time was used wisely; worksheet was complete; answers were thorough.; work was done at home as well as at school	Class time was used wisely; worksheet was complete; some work was done at home as well as at school	Class time not always used wisely; some parts were incomplete; work was not done at home	Class time was not used wisely; many incomplete parts; no work was done at home	
Text Content/Research	Shows much research; facts are accurate and are accompanied with supporting data or examples	Shows research has been done; facts are accurate; some accompanying data or examples	Some research has been done; some inaccuracies; few examples or accompanying data	Little or no research done; many inaccuracies, no examples or accompanying data	
Grammar, Mechanics, Spelling	Complete sentences used to answer questions; few errors in punctuation, capitalization, or tense; no spelling errors	Complete sentences used to answer questions; few errors in punctuation, capitalization, or tense; some spelling errors	Sentence fragments are frequently used to answer questions; errors in punctuation, capitalization, and tense occur frequently; many spelling errors	Complete sentences are not used; many spelling errors	
Finished Product	All areas of the worksheet are complete and thorough.	Most areas of the worksheet are complete and thorough	Several areas of the worksheet are incomplete or blank	Worksheet is mostly blank or not done at all.	

Teacher's Comments:

Rubric For A Group Oral Presentation

Category	4	3	2	1	Rating
Comprehension	Presenters are able to accurately answer almost all questions posed by listeners about the topic(s)	Presenters are able to accurately answer most questions posed by listeners about the topic(s)	Presenters are able to accurately answer a few questions posed by listeners about the topic(s)	Presenters are unable to accurately answer questions posed by listeners about the topic(s)	
Preparedness	Presenters are completely prepared and have obviously rehearsed	Presenters seem prepared, but could have reviewed their information a bit longer	Presenters are somewhat prepared, but it is clear that much more time rehearsing/going over material before class was needed	Presenters do not seem at all ready to make oral presentation	
Stage Presence	All members of the group participate & speak clearly and distinctly 90-100% of the time; no extraneous words or phrases; no prompting/interrupting of speaker; mispronounce no words; all members are 100% focused on presentation when not speaking	All members of the group participate; speak clearly & distinctly 80 - 89% of the time; occasional extraneous words or phrases ;no prompting/interrupting of speaker; a few words are mispronounced; most members are focused on the presentation when not speaking	All members of the group participate; most speak clearly 70-79% of the time; some members frequently add extraneous words or phrases, some prompting/interrupting speaker mispronounce words; some members are not focused when not speaking	Most members of the group often mumble or can not be understood; frequently extraneous phrases or words are added; much prompting/interrupting speaker; many words are mispronounced; when not speaking, members are not focused	
Content	Group shows full understanding of the topic; factual content excellent; reflects good research	Group shows good understanding of the topic; factual content good, but needs more detail on one or two parts	Group shows a good understanding of parts of the topic; factual content could have much more detail/examples; more research needed	Group doesn't seem to understand the topic well; lack of detail; factual information shows little research	
Time Limit/Stays on Topic/Sequencing	Presentation length is within the correct range; all stay on topic 100% of the time; details placed in logical order & effectively presented	Presentation is either a bit too long or a bit too short; most stay on topic 90-95% of the time; details in logical order, but could have been presented in a more enthusiastic/interesting way	Presentation length is somewhat short of requirements; most stay on topic 80-85% of the time; details not in logical order; some confusion with sequencing of events	Presentation length does not meet the requirements presenters do not stay on topic/ show confusion with sequencing of events	

Teacher's Comments: _____

MAP OF LEWIS & CLARK EXPEDITION

DIRECTIONS: Using the blank outline map, trace the route of the Lewis & Clark Expedition. Include all geologic boundaries (i.e. mountain ranges, rivers), latitude and longitude indicators, population centers (including Native American villages mentioned in the journals), and a key.

