

MICRO-LESSON: Grand Canyon

TITLE: Discovering the Grand Canyon: New-Old Place, New Ideas, New Experiences

CURRICULUM FOCUS: Science, Social Studies, English/Language Arts GRADE LEVEL: 6-8; 9-12

VIDEO SEGMENTS:

- ▶ The Saguaro Cactus
- ▶ The Colorado Plateau
- ▶ The Sonoran Desert
- ▶ Ecosystems: Balance Within Food Chains and Energy Pyramids

PROGRAM DESCRIPTION:

These video chapters help students explore the ecological systems and geology of the Grand Canyon, as well as its diverse cultural history. One of the natural wonders of the world, the Grand Canyon offers researchers and visitors access to millions of years of geological history, as well as the opportunity to explore ancient civilizations and the American “Wild West.”

Cinema and history have overlapped to create a romanticized image of the Wild West and its cowboys; in Tombstone, Arizona, visitors can separate myth from reality and consider the impact of media on how we observe and preserve our cultural history.

Long before Wyatt Earp cleaned up Tombstone, the ancient Anasazi civilization centered on the Four Corners (southern Utah, northern Arizona, northwestern New Mexico, and southern Colorado) and is estimated to have emerged around 1200 B.C. Best known for its adobe and stone cliff side dwelling, the Anasazi carved a life from the challenging desert ecosystem; modern Pueblo people claim the Anasazi as their ancient ancestors.

Just as the cliffs reveal the rich cultural history of America’s native peoples, the Grand Canyon reveals its dramatic geological history. Volcanoes, ice, floods and rivers formed this landscape that continues to reveal secrets of our natural history to scientists who study its ancient and unique formations in an effort to understand how our world continues to evolve.

The fragile desert ecosystem has allowed environmental scientists to explore ways in which species interact to survive in harsh climates; their work contributed to the successful reintroduction of endangered species, such as the California condor.

LEARNING OBJECTIVES:

After comparing these videos students will be able to:

- Understand how native cultures structured societies in the region
- Understand how desert ecosystems developed and thrive
- Explain how continued research can help develop practices by which humans can conserve species and habitats
- Explain the contrast between the documented history and romanticized images of the Old West
- Explain how the concept of time and society influence constructions and institutions
- Observe and understand natural resources
- Observe and explore varied populations and ecosystems
- Understand populations, resources, and environments

CLASSROOM CONNECTIONS:

A: Be the Archeologist! The Grand Canyon has been physically marked by ages of geological events. What geological forces shaped the Grand Canyon? What geological forces continue to work on it today? What is the environmental impact of the millions of visitors the canyon annually hosts? Create a Digital Archeological Report. In your Digital Archeological Report you will research and chronicle the geological forces that have shaped the Grand Canyon. You will also conduct research on the impact a continuous stream of tourists and cars, etc are having. You will rely on video segments, images, research data, interviews, and articles. Present your findings to the class.

B: Culture and the Quilt. The Anasazi people literally carved a life for themselves from the environment around them, leaving behind ruins that have inspired generations with their beauty and ingenuity. What would be the challenges facing a society living in those conditions? How might the environment affect the development of culture – Beliefs? Practices? Economy? Art?

Create a Digital Cultural Quilt; your quilt will record and display the cultural life history of the Anasazi. Exhibit your Digital Cultural Quilt in your school.

C: Writing Prompt

▶ American Cowboys and Cattlemen

▶ Cattle Drives

Consider the following questions in response to the above video. Write your responses in a Digital Travel Journal that you will maintain during your journey. As you explore, reconsider the ideas you have recorded today.

- What stereotypes do I hold about the West? How do we build stereotypes?
- What do I expect to find on my journey regarding the cultural history of the area?
- How will I learn about different cultures and how will I record my findings?
- How does learning about other cultures and history affect how I think of myself?

INTERACTIVE TARGET VOCABULARY:

As you begin your exploration and research into the Grand Canyon, create in your Digital Adventure Journal a section for Vocabulary. This compilation of vocabulary will not be the traditional seek and find definitions. You will collect images, parts of articles, video images, brochures, or any other helpful resources that define each of these terms not only to you but also to your classmates.

Pueblo:

Ecosystem:

Mutualism:

Biosphere:

Endangered Species:

Environmentalism:

Conservation:

Cowboy:

ASSESSMENT RUBRIC:

This rubric is on a four-point scale and uses as references *The Skillful Teacher* by Jon Saphier and Robert Gower and *Thinking Like a Historian: Rethinking History and Instruction* by Nikki Mandell and Bobbie Malone.

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QUESTIONS	<ol style="list-style-type: none"> 1. Consistent use of multiple historical facts, perspectives, evidence 2. Uses variety of methods for supporting evidence 3. Relies on identification, evaluation, and comparison/contrast 4. Relies on historical context and change 	<ol style="list-style-type: none"> 1. Relies on multiple historical facts, perspectives, evidence 2. Use of supporting evidence 3. Use of differentiation between and among statements 	<ol style="list-style-type: none"> 1. Uses one historical fact or evidence 2. Limited support 3. Limited use of the historical context 	<ol style="list-style-type: none"> 1. States facts w/no support 2. Little or no use of the historical context
EVIDENCE	<ol style="list-style-type: none"> 1. Relies heavily on primary and secondary sources from a variety of resources 2. Uses deftly research skills in documenting authorities and their impact on work/project 3. Uses analysis, evaluation, synthesis throughout the work/project 4. Uses comparison/contrast to weigh impact of sources on work/project 	<ol style="list-style-type: none"> 1. Uses some primary/secondary sources 2. Uses limited number of other resources 3. Uses research skills on work/project with limited assessment of evaluation of source 4. Uses identification and explanation from the sources on work/project 	<ol style="list-style-type: none"> 1. Uses very limited secondary sources—one or two 2. Uses very limited or no primary sources 3. No attention to research skills evaluating authorities and their impact on work/project 	<ol style="list-style-type: none"> 1. If secondary sources are used, they are traditional: encyclopedia, for example, and very limited use 2. One or no primary sources 3. No evaluation of credibility of sources

INTERPRETATION

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| <ol style="list-style-type: none">1. Uses analysis and synthesis of evidence completely supported from variety of sources and resources2. Relies on explication of context for historical changes3. Provides rationale for using multiple sources and resources to accomplish work/project4. Evaluates and explains intricate connections between people, events, and ideas—both past and present | <ol style="list-style-type: none">1. Addresses the essential questions: who, what, why, when, where1. Will present one or two historical perspectives or historical events/timelines that are different to chart similarities2. Uses limited multiple sources and resources to accomplish work/project3. Does not evaluate and explain intricate connections between people, events, and ideas—both past and present4. Presents in generalities, thereby avoiding any specificity or proof of thesis for work/project | <ol style="list-style-type: none">1. Addresses in limited and cursory fashion the essential questions: who, what, why, when, where2. Uses only identification and description3. Little to no use of supporting evidence | <ol style="list-style-type: none">1. No addressing of the essential questions: who, what, why, when, where2. No use of supporting evidence |
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CAUSE & EFFECT

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| <ol style="list-style-type: none">1. Identifies, evaluates, and analyzes multiple causes/effects—both stated and inferred—intended/unintended—short term/long term2. Differentiates and evaluates how different groups act differently and why | <ol style="list-style-type: none">1. Identifies multiple causes/effects—both stated and inferred—intended/unintended—short term/long term2. Identifies how different groups act differently and why | <ol style="list-style-type: none">1. Addresses multiple causes/effects2. Addresses only short term/long term causes/effects | <ol style="list-style-type: none">1. Addresses only one or two causes and/or effects2. Addresses only short term causes/effects that are obvious or intended |
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CHANGE & CONTINUITY

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| <ol style="list-style-type: none">1. Understands that change and continuity are inextricably linked to specific events and/or developments2. Evaluates change and continuity from variety of perspectives, including but not limited to social, political, economic, cultural levels3. Includes in the analysis trends, movement, patterns | <ol style="list-style-type: none">1. Understands that change and continuity are inextricably linked to specific events and/or developments2. Addresses change and continuity in terms of trends and patterns3. May address one of the following perspectives: social, political, economic, cultural levels | <ol style="list-style-type: none">1. Links change and continuity to one event or series of developments2. Limited discussion and exploration of one of the following: social, political, economic, cultural levels | <ol style="list-style-type: none">1. Addresses change or continuity but not both2. Relationship between change or continuity to an event or series of developments not clearly developed or supported |
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USING THE PAST

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| <ol style="list-style-type: none">1. Distinguishes, analyzes, synthesizes elements and patterns in historical periods that compare and contrast to the present2. Uses knowledge of a past event or period to infer and thereby draw conclusions about a modern event or period | <ol style="list-style-type: none">1. Chronicles the developmental relationship throughout time and space between patterns and contemporary events2. Identifies which factors contributed to historical changes over time | <ol style="list-style-type: none">1. Makes linear connections between past event and modern issues2. May see similarities and/or differences3. Will not address the import of these connections or intervening developments | <ol style="list-style-type: none">4. Sees and therefore cannot make any connections between the past and the present |
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ACADEMIC STANDARDS

The following standards are from Washington State Learning Standards:

http://www.k12.wa.us/CurriculumInstruct/EALR_GLE.aspx

In addition, this Micro-Lesson includes national standards from The National Council for the Social Studies (NCSS), the National Council of Teachers of English (NCTE), and National Science Teachers Association (NSTA). NCSS and NCTE have developed national standards to provide guidance for teaching social studies and English/Language Arts. The National Research Council created the standards for NSTA:

<http://www.nsta.org/publications/nses.aspx>

- Understands and applies knowledge of historical thinking, chronology, eras, turning points, major ideas, individuals, and themes in local, Washington State, tribal, United States, and world history in order to evaluate how history shapes the present and future —(middle school)
- Understands and applies knowledge of historical thinking, chronology, eras, turning points, major ideas, individuals, and themes in local, Washington State, tribal, United States, and world history in order to evaluate how history shapes the present and future —(high school)
- Understands and applies reasoning skills to conduct research, deliberate, form, and evaluate positions through the processes of reading, writing, and communicating— (middle school /high school)
- Uses listening and observation skills and strategies to gain understanding. —(middle school)
- The student uses communication skills and strategies to interact/work effectively with others. —(middle school/ high school)
- Uses communication skills and strategies to effectively present ideas and one's self in a variety of situations. —(middle school/ high school)
- Understands and applies reasoning skills to conduct research, deliberate, form, and evaluate positions through the processes of reading, writing, and communicating —(middle school/high school)

NCSS

- Understand and experience the study of culture and cultural diversity
- Explain the origins and continuing influence of key ideals of the democratic republican form of government, such as individual human dignity, liberty, justice, equality, and the rule of law
- Understand how people create and change structure of power, authority, and governance
- Describe and compare how people create places that reflect culture, human needs, government policy, and current values and ideals as they design and build specialized buildings, neighborhoods, shopping centers, urban centers, industrial parks, and the like

NCTE:

- Students read and view a wider range of print and nonprint texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
- Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features.
- Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g. print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
- Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities

NSTA:

- Appreciate that for some needs, the cultural backgrounds and beliefs of different groups can affect the criteria for a suitable group
- Understand that scientific investigations require the contributions of individuals from different disciplines, including engineering
- Understand that science and technology are pursued for different purposes—scientific inquiry driven by the desire to understand the natural world and technology design driven by the need to meet human needs and solve human problems. Technology, by its nature, has a more direct effect on society than science because its purpose is to solve human problems, help humans