

Arizona

Alliance Created Giant Floor Map Lesson

Title: Arizona and the Colorado River

Recommended Grades: High School

Time Needed: 1-2 class periods

Objectives:

Students will:

- Identify the locations of important dams along the Arizona portion of the Colorado River.
- Identify prominent cities/towns along the Colorado River.
- Identify and locate types of recreation found on the Arizona portion of the Colorado River.
- Describe how hydrology (e.g. quality, reclamation, and conservation of water) in the Colorado River area influenced the character of Arizona.

Materials:

- Supply bags (grocery sacks) containing the following and labeled with name of one of the 7 dams
 - Yellow, green, brown, gray, white, black, and orange cubes
 - Important Dams in Arizona map(s)
<http://geoalliance.asu.edu/sites/default/files/maps/AZ-DAMS.PDF>
 - Report Information Worksheets
 - Readings (printed for each group or accessed electronically on personal or classroom devices)
- Arizona and the Colorado River PowerPoint

SIOP Elements:

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Preparation Adapting content Linking to background Linking to past learning Strategies used	Scaffolding Modeling Guided practice Independent practice Comprehensible input	Grouping Option Whole class Small groups Partners Independent
Integrating Processes Reading Writing Speaking Listening	Application Hands on Meaningful Linked to objectives Promotes engagement	Assessment Individual Group Written Oral

Preparation:

You may decide to do much of the reading and writing prior to using the giant map. Gather the materials for each group into a grocery sack or some other container prior to the lesson. There are 7 dams on the Colorado River so you will divide the students into 7 groups meaning 2 groups will share 3 of the base camps. Label each supply bag with the dam the students in that group will be researching. Procedures mention using colored cubes to delineate different places or uses on the map. You may want to give each group several of the same color of cubes so the array is more impressive on the floor map. Just one cube might be too small to notice.

Rules:

- Shoes are not allowed on the map. Please have students remove shoes before walking on the map. Students must wear socks. No bare feet.
- No writing utensils on the map. Keep all writing utensils and other sharp objects 12 inches from the edge of the map.

Directions:

1. Introduce the lesson by showing students slides 1-5 of the Colorado River PowerPoint. Divide the students into 7 groups and distribute the supply bags to each group. **(Grouping Option: Small groups) (Integrated Processes: Listening, Reading)**
2. Have the 7 groups divide into 4 base camps (red, blue, green and yellow) and sit near their dot on the map.
3. Have two students from the blue group take the blue chain and have them lay the chain on the giant floor mark showing the course of the Colorado River as it pertains to AZ. **(Application: Hands-on, Promotes engagement)**

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4. Have the 7 groups use the Important Dams of Arizona map from their supply bag to determine from the dates of construction which dam should go on the map first. (Laguna Dam) Show slide 6. Have each group locate on the giant map their dam (blue cube) and closest city (red cube) using longitude and latitude. Have them announce the name of their dam and its closest city.
5. When all the markers (blue and red cubes) are placed on the map, have students go back and look at the names and dates of those dams on the Colorado River. Are there any reasons they can offer for why the dams were built in this order? **(Application: Hands-on, Promotes engagement, Scaffolding: Comprehensible input)**
6. If students have not already read the articles provided, now is the time for them to individually or as a group read the articles and finish up the worksheet questions. **(Integrated Processes: Reading, Writing)**
7. Show slide 7. From the readings, have the groups identify why the dam was built and what are its current uses by placing as many colored cubes as the research reveals. **(Application: Hands-on, Promotes engagement, Scaffolding: Comprehensible input)**
8. Discuss what colors dominate the Colorado River. **(Integrated Processes: Speaking)**
9. Show slide 8. Introduce the terms: hydrology, surface water, ground water, and reclaimed water. Have students write the definitions and draw an illustration on their worksheets. **(Application: Hands-on, Promotes engagement, Scaffolding: Comprehensible input)**
10. Show slide 9. Conclude the lesson with having students discuss the questions on the slide. **(Integrated Processes: Speaking)**

Extensions:

1. Have students research the rest of the dams on the Important Dams in Arizona map and determine the closest cities and uses for these dams.

Arizona Standards

Science Standards

Earth and Space

Plus HS+E.E1U1.5 Obtain, evaluate, and communicate information on the effect of water on Earth's materials, surface processes, and groundwater systems.

Social Studies Standards

Geography

The use of geographic representations and tools help individuals understand their world.

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HS.G1.1 Use geographic data to explain and analyze relationships between locations of place and regions. Key tools and representations such as maps, remotely sensed and other images, tables, and graphs

Human-environment interactions are essential aspects of human life in all societies.

HS.G2.3 Evaluate the impact of human settlement on the environment and culture of specific places and regions.

HS.G2.4 Evaluate the use and sustainability of natural resources.

ELP Stage V

Basic

Reading

Standard 4: The student will analyze text for expression, enjoyment, information and understanding.

B-4 answering literal questions about text.

National Geography Standard

The World in Spatial Terms

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information.

Places and Regions

4. The physical and human characteristics of places.

Environment and Society

14. How human actions modify the physical environment.

15. How physical systems affect human systems.

Vocabulary:

hydrology

surface water

groundwater

reclaimed water

References:

Colorado River Basin

https://www.desertusa.com/colorado/coloriv/du_coloriv.html

Important Dams in Arizona

<https://geoalliance.asu.edu/sites/default/files/maps/AZ-DAMS.PDF>

Wikipedia