

California Water Story

Respect Rule: Look, Listen, Learn, and Leave Alone (until instructed).

Overview

Water is one of California's most precious natural resources. It is also nonrenewable. Therefore, it is vital that students learn scientific facts about water, but also the place of water in California's history and its importance in California's economy.

Background

For thousands of years, the native peoples were good stewards of California's water using this valuable resource for agriculture, transportation, and food. Their lives and homes were established near the more isolated watersheds. Upon the Europeans' arrival into the area, the complexion of the landscape and the use of water changed, sometimes slowly, as in the movement of mission life, or quickly, as during the Gold Rush. Because of the distribution of water throughout the state of California, it is vital that all Californians accept responsibility for its protection. By viewing the video, *The History of Water Use in California*, one begins to understand that everyone who lives or works in the same watershed is connected to everything else living or growing in it.

Video Activity

Activity: The History of Water Use in California

Time: 45 minutes

Materials: Video and video script of *The History of Water Use in California*, California's Water History Student Worksheet, KWL Assessment Worksheet (page 2, Introduction), digital camera, computer, PowerPoint software

1. Work on the KWL assessment with the students using the video script.
2. View video and have students complete student worksheet while viewing.
3. Continue to complete and discuss the KWL assessment.
4. Make a PowerPoint on the local history of water. Assign team or individual student a frame from the video. Have students take digital pictures of local sites that depict their frame. Combine pictures to make a PowerPoint presentation on the local community's water story.
5. Present to school and or local history society or enter as an exhibit in county fair.



Objectives

Student will:

1. recognize that California has changed over time and that water has been central to that change; 2. create a PowerPoint of the student's local water story.

Grade Levels

4-8

Adult/Student Ratio

Whole Class

Where

In the classroom to view a video as a segue to the study of California's water.

Skills

Sequencing of events, drawing conclusions, comparing, contrasting

The History of

Water Use in California

Video Script

Frame	Frame #	Description
Title	1	The California Water Story
Flowered meadow	2	Scenic California it's called—a
Sailboats	3	Place where the sun always
Beach	4	shines.
Lake	5	And who can deny it?
Scenic	6	California is a land of great geographical diversity,
Mountains	7	from snow-peaked mountains
Desert	8	to dry deserts,
River	9	from sparkling rivers,
Green Meadow	10	to spring green meadows,
Coastline	11	from its 1,200 mile picturesque coastline,
Housing	12	to its cities, home to this state's more than 30 million residents.
Tomatoes	13	and one of the most productive agricultural regions in the world.
River	14	And no other resource is more important to California than its water.
Aqueduct	15	But most of us tend to forget that the California we know today hasn't always been this way.
Desert	16	California is partly desert in many places.
Indians	17	Although native peoples had been living in this area for a long time, California's written history begins with the Spanish who explored and settled here.
The Missions		
Mission San Diego	18	In 1769 Catholic priest Father Junipero Serra, founded the first California mission in San Diego, determined to convert the native peoples to his religion.
Father Serra	19	In the next few years Father Serra and some of the Spanish army struggled northward, and by following the Salinas River,
Traveling Padres	20	they eventually found the bay at Monterey, and built the town which was to be the capital of Alta California.
Carmel Mission	21	In 1770, Father Serra founded the second California mission on the Carmel River, just south of Monterey.
Mission San Luis Rey	22	Eventually, Serra and his Catholic brothers founded a chain of 21 missions in California.
Mission Camp	23	Many of these were located on rivers which provided water for the animals and people, and for their crops.

Padres Farming	24	The native people dug crude ditches to move water from the nearby streams and rivers to irrigate the mission gardens and farms. These areas around the missions became the foundation for California's farms and ranches. Californians did not get much guidance from the Spanish government,
Mission San Luis Rey	25	These areas around the missions became the foundation for California's farms and ranches. Californians did not get much guidance from the Spanish government,
Spanish Writing	26	but about 25 families received land grants from the government to territory clustered around the missions.
Sketch of Governor	27	Their rights to the water were also granted.
Californians on horse-back	28	These families kept their lands and their rights even after Mexico won its independence from Spain.
Mining		
Water Wheel	29	In 1848, gold was discovered in the American River in the foothills of the Sierra Nevada Mountains. California broke away from Mexico in this same year and became a state in 1850.
Gold Panning	30	Thousands of people came from all over the world to try to find gold in California's rivers. Some panned for gold in the gravel streams.
River Mining	31	The fortune seekers built the first California water works--reservoirs to divert the water and 4,000 miles of ditches and flumes to bring water to their sluice boxes
Sluice Box	32	These boxes were designed to handle more gravel and get more gold out by using the power of water running
Miners and box	33	over the gravel they had dug out of the stream beds.
Water hoses	34	Some miners used water to try to get gold out of the mountains and cliffs by aiming huge water hoses,
Monitor	35	called monitors, to wash the rock down where it could be examined for gold. This process is called hydraulic mining.
Choked River	36	But dirt washed down from the mountains began to choke the rivers in the valleys. It took a court order in 1884 to make the miners stop hydraulic mining.
Old farmer in ditch	37	When the gold began to run thin, California began to use the
Farmer with water	38	water ditches made by the miners to supply water to the Central Valley soils--
Boy and fruit	39	which were found to be a source of new riches--agriculture.
Lumbering		
Redwood forest	40	At the same time, on the coast vast forests were cut and the trees floated down rivers to the ocean where they were loaded on ships and brought to the cities.

Log in River	41	Saw mills were built on rivers and streams to cut the logs into lumber
Loggers with axes	42	to build new towns and cities for people who came to find gold and stayed to reap California's other riches.
Agriculture		
Windmill	43	To produce crops and develop towns, farmers and townspeople pumped water from beneath the surface of the ground.
Farmer and ditch	44	By the 1920's large areas were able to be farmed using underground water.
Underground water bubbling up	45	But before agriculture could grow to today's standards,
Modern Farm	46	California had to do some careful planning about how to make best use of its water resources.
River	47	People had to use both rivers and ground water.
Pumpkins	48	Today, California agriculture uses 80 percent of the state's available water to be one of the most productive farm areas in the world.
Flood Control		
Old Sacramento flooded	49	California's water has posed another problem throughout the state's history:
car in flood	50	heavy winter rains can cause rivers to flood, which can be very
Flood	51	destructive to towns and cities built next to the rivers
levees being built in 1800s	52	The first flood control plan was devised in 1880, but it wasn't until the early 1900s that levees were built beside rivers to hold in their high water levels.
levees being built	53	Levees also made it possible to drain the Sacramento-San Joaquin Delta marshland
Delta and farmlands	54	and uncover rich farm land.
Dam	55	In the 1930s and 40s dams were constructed to prevent floods and store water which could be used for farms and in cities.
Transportation		
River boat	56	Rivers have also been important in California's history as a way of transporting good and people. As early as 1875,
Barge	57	the Army Corps of Engineers worked to improve the Sacramento and Feather rivers so boats could navigate them.
River barge	58	Rivers are still an important way Californians transport their goods around the state and to the ocean for trade with foreign countries.
Water Development		
San Francisco—aerial view	59	Our water resources have been developed by local, state, and federal agencies.

Hetch Hetchy Reservoir	60	For example, the city of San Francisco transports water from the Tuolumne River in the Sierras across the state in the Hetch Hetchy Aqueduct to its thirsty citizens.
Los Angeles—aerial view	61	Much of the city of Los Angeles' water comes from the Owens Valley
Owens Valley	62	over 200 miles away on the east side of the Sierras. Other southern
California Aqueduct	63	California areas draw their water from the Colorado River and from water transported down from northern California.
Bare Field	64	A devastating drought in the 1920s convinced the state and federal governments that water planning on a large scale was necessary.
Dam	65	Dams were constructed to store water in reservoirs and to provide hydroelectric power to the state.
Aqueduct	66	Aqueducts were built to move water around the state.
Map of rain	67	California has a serious water distribution problem. About 70 percent of the rainfall is in the north part of the state, but approximately 70 percent of
Graph of people	68	the people and farms use the water in California in the central and south part of the state.
Reservoir	69	Dams and reservoirs help us save our water so it can be moved to where it is needed.
Boaters	70	We can also use our reservoirs for recreation and for creating hydroelectric power.
Fish	71	In recent years, we've learned we also need to protect our rivers and wildlife.
Fish swimming	72	Water is being released from dams to help bring back native fish.
Wetlands	73	And we now realize that marshlands or wetlands are productive communities of plants and wildlife.
Geese	74	Water is necessary to restore fish and wildlife areas and other natural places in our state.
Scenic	75	Good water management means we can balance our natural resource for,
Fisherman	76	the environment,
City	77	urban use,
Apricots	78	agriculture,
Flood	79	flood control
Drought	80	drought control
Powder station	81	and energy
People	82	for all California's people now
Children	83	and in the future.
	84	WEF title slide

California's Water History

Student Worksheet

1. Why were California missions built near rivers? _____

2. Name three ways gold miners used water to help them get this precious metal.

3. Name two other activities in California history that depend on water: _____

4. What percentage of California's water resources is used by agriculture today?

5. What percentage of people live in the southern portion of California? _____

6. Where does 75% of the rain and snow fall in California? _____

7. What are some reasons that careful planning must be used to control our water resources? _____

Answers:
1. To provide water for the people and animals at the missions and to irrigate crops; 2. Panning gravel, sluicing gravel and hydraulic mining; 3. Lumbering and milling of wood and irrigation for farms and ranches; 4. 85%; 5. 75%; 6. In the north; 7. Irrigation, drought and flood control, urban or city use, recreation, creation of hydroelectric power, protect wildlife and environment.