

# MAPPING HISTORY OF THE SANTA CLARA VALLEY

by Kathy Machado





"**History**...is an aggregation of truths, half-truths, semi-truths, fables, myths, rumors, prejudices, personal narratives, gossip, and official prevarications. **It is a canvas upon** which thousands of artists throughout the ages have splashed their conceptions and interpretations of a day and an era. Some motifs are grotesque and some are magnificent."

Philip D. Jordan





Native Americans of California



Grinding acorns for bread



Jail House built by Chinese



Old Adobe built in 1807 in the old town of Santa Clara



Acorn granaries



Mission Santa Clara 1777



Deer skin dance



Mantilla & comb worn by Concepcion Aguinaldo, 1806



Horace Mann School, 1895



Grand Celebration, Oct. 29, 1850



Asian students at Santa Clara College, 1890



California poppy



St. Patrick's Church, San Jose, 1910



San Jose's old city hall, 1935



Headquarters fire department, San Jose



Pumping water, 1912



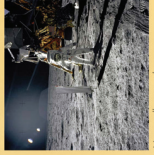
Power gardens, 1940



World War I victory parade, 1918



John Glenn gives nod & sign pre-launch training



Man walking on the moon



Thin film, 2003



Microsoft mouse



NASA Ames returning humans to the moon, 2020



Trails



Western burrowing owl



Fields of flowers

## Native Americans

3200 B.C.

"We've got water!"

## Spanish and Mexican

1769 A.D.

"We had enough water!"

## Statehood of California

1900

"We dug for water!"

## Valley of Heart's Delight

1970

"We imported water!"

## Silicon Valley

2007

"We learned to conserve!"

## Conservation Legacy

2050

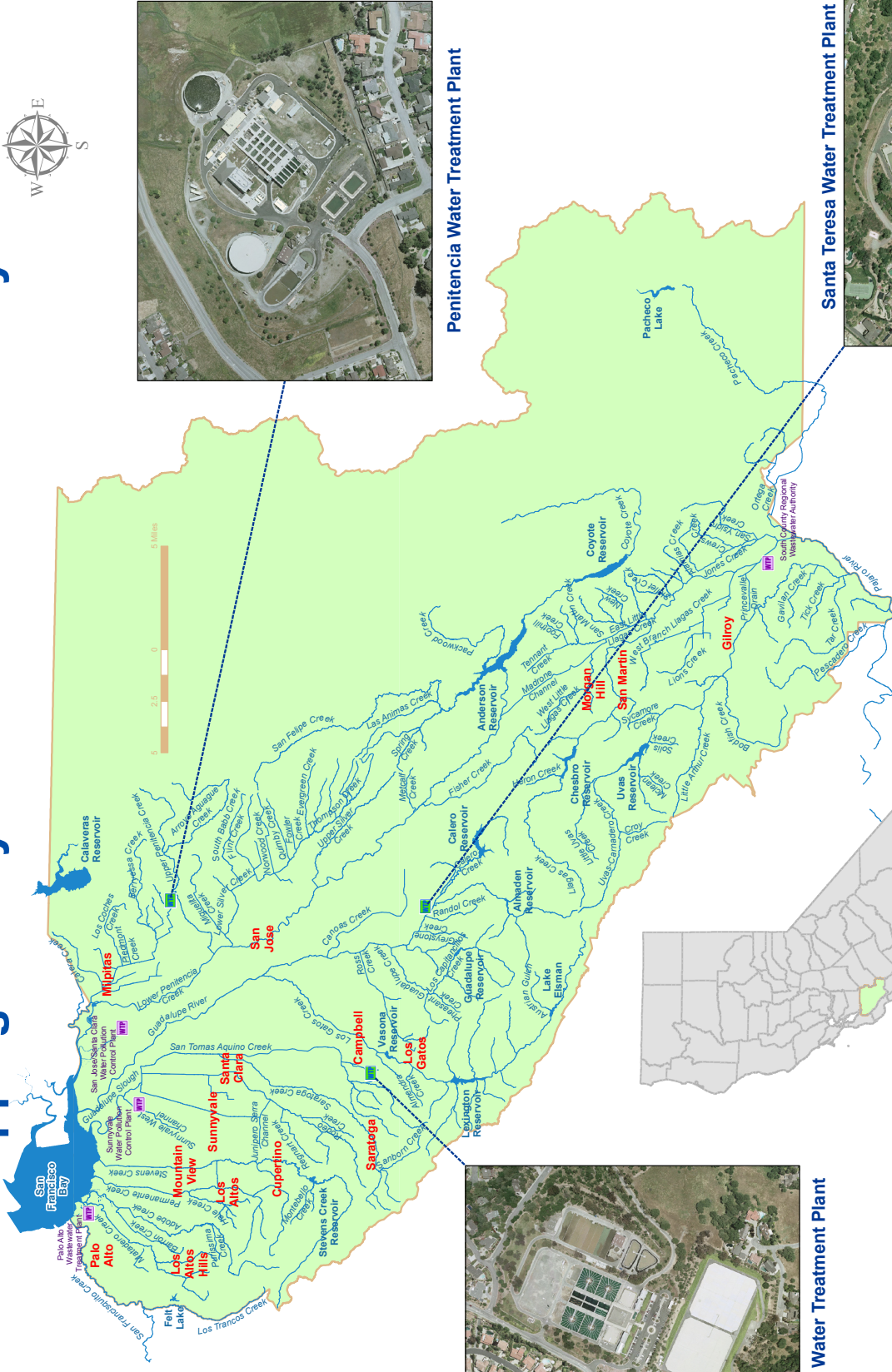
"We'll find new sources!"

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# Mapping History of the Santa Clara Valley



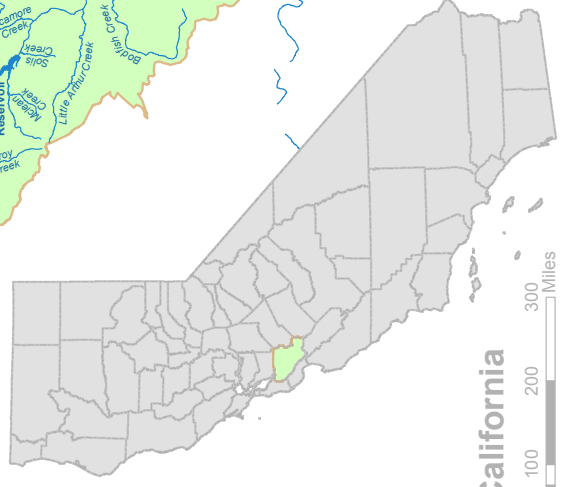
Penitencia Water Treatment Plant



Santa Teresa Water Treatment Plant



Rinconada Water Treatment Plant



California



Date of Photography: 2006

GIS themes are for illustration and general analysis purposes only and are not intended to be used for legal or regulatory purposes. Users are responsible for ensuring the accuracy, completeness, and use of this information is their responsibility.

# Introduction

This mapping history activity will show the growth and change in the Santa Clara Valley over the past 5,000 years and into the future. First, a leader will be chosen by your teacher. Participants will then be divided into six groups. Each group will be responsible for a particular time period and be given a box containing items to be placed on the map after the group reading for that period. The six boxes will dramatically illustrate the changes that have taken place here in the county where we live.

Participants will stand or sit around the large map of the county. Period music will play. Then participants will share the reading with the leader beginning and all responding. Participants, in turn, will read the numbered items beginning with the group that is presenting a period. Period music will play again as participants place items from their box on the map. The leader/teacher may include facts/dates at this time.

At the conclusion of the activity we will discuss how you want the map to look over the next 50 years. If you have questions or suggestions, please contact Kathy Machado, Education Outreach Coordinator for the Santa Clara Valley Water District. Her phone number is (408) 265-2607, ext. 2331. Her email address is: [kmachado@valleywater.org](mailto:kmachado@valleywater.org).

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# Native Americans (3200BC - 1750AD)

## MUSIC

Tribal Winds: Creator's Prayer

## SCRIPT

**Leader:** Do you know who lived here long ago?

**All: The Native Americans started the show.**

**Leader:** Where did they come from? Where did they go?

What has happened? Does anyone know?

**Student 1:** The Natives were here for thousands of years.

**Student 2:** The “people of the west,” the Ohlone were not feared.

**Student 3:** They say 10,000 lived around the bay,

**Student 4:** Hunting, swimming, fishing every day.

**Student 5:** There were many tribes or groups or clans.

**Student 6:** Some settled in our valley where we now stand.

**Student 7:** They gathered fruits and berries, and hunted bear and deer.

**Student 8:** They had plenty of water; that is clear.

**Student 9:** If a creek dried up, they could move in a day.

**Student 10:** They didn't have a lot of things; it wasn't their way.

**Student 11:** They built their shelters by the creeks and streams,

**Student 12:** They made tule boats and shared their dreams.

**Leader:** If the Native Americans could speak to us today,  
what would they tell us? What would they say?

**All: We've got water!**

## MUSIC

Tribal Winds: Circle of Life (Music plays as students place the contents of Box 1 on the map)

## MAP

Add wildlife (40 figures), vegetation (4 trees), Native American figures to represent 10,000

# Native Americans (3200BC - 1750AD)

## POINTS TO DISCUSS

1. Population—10,000
2. Abundance of resources—plenty of water; sustainable lifestyle
3. [What caused life to change](#): Arrival of Spanish and the Mexicans

## TEACHER FACTS

- In winter and spring, there are hundreds of ponds.
- Rivers and creeks are bordered by willow, alder, laurel, cottonwood and blackberry.
- Ohlone, “people of the west,” discard shells;
- build conical houses made from redwood bark and attached to a frame of wood; also dome-shaped houses of woven and bundled mats of tule rushes, 6-20 ft. in diameter;
- burn grasses;
- conduct low-impact mining;
- gather plants;
- hunt wildlife including bear, elk, antelope deer, salmon, ducks, quail, geese ([40 figures](#));
- plant buckeye trees in riparian zones (stream corridors) ([trees](#)).
- In 1700, the Ohlone population was 10,000 in the entire Bay Area ([Native American figures](#)).

## TOPICS FOR FURTHER STUDY

- Describe a day in the life of a typical Native American in the bay area.
- What did the Native Americans use plants for?
- Make a typical Olone tule boat or conical home out of redwood bark.
- What kind of mining did the Native Americans do?

# Spanish and Mexican period (1769-1848)

## MUSIC

McNeil Vol. 1 Disk 1: Muineira d'a Fonte - traditional tune from Spain

## SCRIPT

**Leader:** Who followed the natives? Who was next in time?

**All:** The Spanish and the Mexicans were next in line.

Student 1: The Spanish arrived in 1769.

Student 2: For the Native Americans this began their decline.

Student 3: The Spanish built ranchos with cows and a pig.

Student 4: They had enough water, they didn't need to dig.

Student 5: The padres built missions we've been told;

Student 6: Converted the natives, a hundredfold.

Student 7: El Camino Real was a road they built.

Student 8: Got the natives to water, so trees along its path wouldn't wilt.

Student 9: San Jose, Santa Clara and San Martin were laid out.

Student 10: In 1821, Mexican independence came about.

Student 11: California passed to Mexico

Student 12: But not for long as you may know.

**Leader:** If the Spanish and the Mexicans could speak to us today, what would they tell us? What would they say?

**All:** We had enough water to meet our need. We farmed and built cities so we could succeed.

## MUSIC

McNeil Vol. 1 Disk 1: Cielito Lindo - 19th century Mexican folksong (Music plays as students place the contents of Box 2 on the map)

## MAP

1. Add cities: San Jose, San Martin, and Santa Clara; add Santa Clara Mission and Roadway to represent The Alameda
2. Add vegetation—trees along the Alameda and 40 farm animals
3. Take off Native Americans and replace with single Hispanic figure

# Spanish and Mexican period (1769-1848)

## POINTS TO DISCUSS

1. Replaced Native American figure with Hispanic figure due to disease
2. **Ranchos**—introduction of farm animals and **Missions**—only one in Santa Clara County
3. Three cities founded—San Jose (1777), Santa Clara (1777) and San Martin (1844)
4. **What caused life to change:** discovery of gold brought thousands to California

## TEACHER FACTS

- 1769 was the first Spanish settlement in the valley.
- 1777 San Jose becomes California's first pueblo or civil settlement
- 1777 Fr. Junipero Serra founds Mission Santa Clara
- 1777 City of Santa Clara founded
- 1797 Mission San Jose founded
- 1799 The Alameda (El Camino Real) laid out; 200 Indians water trees along the route
- 1806 Ohlone population, 7500, deaths due to measles & related complications between March and May (**replace Native American figures with one other figure**).
- 1810-1821 Mexican war of independence transfers California from Spain to Mexico.
- 1814 John Gilroy arrives in Monterey Bay.
- Mexican land grants (**40 figures of farm animals**).
- 1825 California becomes a territory of Mexico.
- 1844 Martin Murphy names settlement San Martin in honor of his patron saint
- 1845 New Almaden Quicksilver mine opens.
- 1846 Trouble between U.S. and Mexico begins.

## TOPICS FOR FURTHER STUDY

- Describe a typical day of life on a rancho in early California.
- Describe life at the early California missions ([www.athanasius.com/camission/san\\_jose.htm](http://www.athanasius.com/camission/san_jose.htm)).
- Which cities were founded first in Santa Clara County? Why do you think they were first?
- How much gold was found in Santa Clara County? What was mined here?



# Statehood of California (1848-1900)

## MUSIC

McNeil Vol. 1 Disk 2: My Darling Clementine - gold rush song

## SCRIPT

**Leader:** What happened next? Why did others come?

**All:** Gold brought thousands who hoped to find some.

Student 1: Gold brought lots of people to our state.

Student 2: They didn't all find gold in 1848.

Student 3: But they found a fine place in our valley to live.

Student 4: Planted orchards, built railroads; very progressive.

Student 5: California was taken from Mexican hands.

Student 6: Given to the U.S. by war, you understand.

Student 7: In 1850 it became the 31st state.

Student 8: San Jose was the capital named on that date.

Student 9: Soon, ten cities were laid out; they all were new.

Student 10: Alviso, Los Gatos, Milpitas, Mountain View

Student 11: Saratoga, Gilroy, Palo Alto

Student 12: Campbell, Morgan Hill, and Cupertino

Student 13: And they dug the first well; more water they found.

Student 14: Soon windmills were common, pumping water from the ground

Student 15: Sixty thousand people now shared this space

Student 16: Our valley was changing; it's not the same place.

**Leader:** If the early Californians could speak to us today, what would they tell us? What would they say?

**All:** We dug for water! We found it in the ground. It's the only "liquid gold" that any of us found!

## MUSIC

McNeil Vol. 1 Disk 2: Sacramento (Music plays as students place the contents of Box 3 on the map)

## MAP

1. Add orchards, railroads (to San Francisco and Monterey), six windmills and ten cities
2. Add 2 San Jose Mercury news boxes and four figures and one miner to represent the growth in population
3. Take off half of the wildlife and return to Box 1

# Statehood of California (1848-1900)

## POINTS TO DISCUSS

1. 1848 discovery of gold caused jump in [population](#)—60,000
2. Ten cities founded: 1849-1899
3. California statehood, 1850; San Jose was California's first capitol
4. Newsboxes—San Jose Mercury news began as weekly magazine in 1851
5. 1856 first orchards planted—[windmills](#) soon needed to draw water from ground
6. Due to lack of space [wildlife](#) began to disappear
7. Railroad was built to carry goods to San Francisco and Monterey in 1870s
8. [What caused life to change](#): population growth

## TEACHER FACTS

- 1848 American forces conquer Mexico & Mexican California becomes official property of US with the Treaty of Guadalupe Hidalgo.
- 1848 Gold is discovered in Sacramento.
- 1849 Constitution of State of California is adopted and San Jose is named state capitol.
- 1849 City of Alviso founded.
- 1850 CA becomes 31st state.
- 1850's Los Gatos, Milpitas & Mountain View laid out.
- 1851 Saratoga founded & Mercury News started as weekly.
- 1852 Ohlone population decimated to 864-1,000 and continues to decline as a result of abysmal birth rate, high infant mortality rate, diseases and social upheaval associated with European immigration to California
- 1854 first well dug.
- 1856 first prune orchards.
- 1864 San Jose-San Francisco railroad completed; gives boon to agriculture.
- 1869 City of Gilroy recognized.
- 1870's artesian wells and wells pumped by windmills become common.
- 1870's South Pacific Coast Railroad constructed through Pajaro Gap in Monterey. Farmers transport crops south.
- 1885 Campbell founded, 1888 Palo Alto laid out, 1892 Morgan Hill named, 1899 Cupertino founded.
- 1900 Population, 60,000 (6 figures)

## TOPICS FOR FURTHER STUDY

- How does a windmill work? What are we using today to get water out of the ground?
- Compare the nine cities: Alviso, Los Gatos, Milpitas, Mountain View, Saratoga, Campbell, Palo Alto, Morgan Hill and Cupertino. Include the following in your comparison: population from 1900 to the present, year of settlement, businesses, size, number of parcels/homes, ethnic mix.

# Valley of Heart's Delight (1900 - 1970)

## MUSIC

McNeil Vol. 2 Disk 1: California Here I Come - 1924

## SCRIPT

**Leader:** What happened after that? Did more people arrive?

**All:** Many came searching for a way to survive.

Student 1: The Santa Clara Valley was called the Heart's Delight

Student 2: Vegetation and wildlife were everywhere in sight.

Student 3: Cities were established; Sunnyvale, Los Altos, Los Altos Hills and Monte Sereno by name.

Student 4: Each city so different, you know they're not the same.

Student 5: Fred Tibbets was hired in 1921,

Student 6: To make sure there was water for everyone.

Student 7: Ten dams and reservoirs were built for conservation.

Student 8: And water was put in ponds for percolation.

Student 9: Two wastewater treatment plants came online.

Student 10: Those who pollute are given a fine.

Student 11: The first imported water came from San Francisco.

Student 12: They got it from Hetch Hetchy, from Yosemite's flow.

Student 13: We also get some water from the feds and the state.

Student 14: Half our water is imported even to this date.

Student 15: Eighty million gallons is treated every day.

Student 16: Rinconada Water Treatment Plant is where, they say.

Student 17: Chlorinate, flocculate and remove the sedimentation.

Student 18: Filtrate, and final disinfection by chloramination.

Student 19: By 1970 the population had grown,

Student 20: More than a million people; it's well-known.

**Leader:** If these people could speak to us today, What would they tell us? What would they say?

**All:** We imported water! We built some dams. Water storage was in our plans...

## MUSIC

McNeil Vol. 2 Disk 2: San Francisco - 1967 (Music plays as students place the contents of Box 4 on the map)

## MAP

1. Add 10 reservoirs, three cities, Rinconada Water Treatment Plant and 100 figures
2. Add San Jose/Santa Clara Pollution Control Plant and Sunnyvale Pollution Control Plant
3. Take off Alviso (Box 3), all the bears, beavers and moose (Box 1), and windmills (Box 3)

# Valley of Heart's Delight (1900 - 1970)

## POINTS TO DISCUSS

1. Bear, beaver, moose all gone
2. Windmills gone; reservoirs, treatment plants and percolation ponds built; water is imported
3. Four more cities established; [Alviso](#) is annexed to San Jose in 1968
4. Population increases to one million
5. [What caused life to change](#): Hi-tech industry and population growth

## TEACHER FACTS

- 1908 City of Los Altos established
- 1910 Population, 83,539 (8 figures)
- 1912 City of Sunnyvale incorporated
- 1920 Population, 100,676 (10 figures)
- 1921 Fred Tibbets report recommends reservoirs, dams, pumping stations, system to distribute water
- 1930 Population, 145,118 (15 figures)
- 1934 First imported water becomes available when San Francisco completes Hetch Hetchy Aqueduct
- 1935 Five dams and reservoirs are completed: Almaden, Calero, Guadalupe, Stevens Creek and Vasona
- 1936 Coyote Dam and Reservoir completed
- 1938 Construction of percolation facilities on area creeks begins to prevent land subsidence
- 1940 Population, 174,949 (17 figures)
- 1950 population, 290,547 (29 figures)
- 1950 Anderson Reservoir completed
- 1952 Lexington Reservoir, the largest in the county (capacity of 89,000 acre ft.) completed
- 1956 San Jose/Santa Clara Pollution Control Plant and Sunnyvale Water Pollution Control Plant constructed
- 1957 Uvas Dam constructed
- 1957 City of Monte Sereno incorporated
- 1965 state-funded South Bay Aqueduct begins delivering of water to the Santa Clara Valley
- 1960 Population, 642,315 (64 figures)
- 1967 Rinconada, the first drinking water plant comes online
- 1968 Alviso annexed by the city of San Jose (take off Alviso)
- 1970 Population, 1,064,315 (100 figures)

## TOPICS FOR FURTHER STUDY

- Why were the dams and reservoirs built? How do they work? Compare them to each other including size, capacity and use of water.
- Why were the wastewater treatment plants built? How do they work?
- Why was the water treatment plant built? How does it work? How is it similar/different from the wastewater treatment plants?
- Compare the population growth by city during this period.



# Silicon Valley (1970 - present)

## MUSIC

Billboard Disk 1: The Way It Is

## SCRIPT

**Leader:** What happened next? Is the story done?

**All:** Listen to the changes, everyone!

Student 1: There's more water and wastewater treatment plants.

Student 2: People know it is important.

Student 3: Ozonation is used to clean water now.

Student 4: It is more expensive, but the taste is better. Wow!

Student 5: The population continues to grow.

Student 6: Where will it end; does anyone know?

Student 7: Hi-tech companies settle in.

Student 8: Apple, Intel, and Hewlett Packard begin.

Student 9: The population continues to grow.

Student 10: Where will it end; does anyone know?

Student 11: Water recycling is introduced.

Student 12: Our water supply gets a boost.

Student 13: The effluent from the plants went into the bay.

Student 14: Now it is recycled every day.

Student 15: Soon it will be used by everyone.

Student 16: When all the infrastructure building is done.

Student 17: The valley's changed a lot in the past forty years.

Student 18: Running out of water is just one of our fears.

Student 19: The Silicon Valley is what it's called today

Student 20: 1.8 million people live in the South Bay.

**Leader:** If all these people could speak to us today, What would they tell us? What would they say?

**All:** We learned to conserve. Water is precious. Save every drop.  
Wasting water has got to stop!

## MUSIC

Billboard Disk 2: New World Man (Music plays as students place the contents of Box 5 on the map)

## MAP

1. Add Penitencia Water Treatment Plant & Santa Teresa Water Treatment Plant
2. Add Palo Alto Reclamation Facility & South County Wastewater Authority
3. Add 6 hi-tech companies (Apple, Adobe, Intel, Cisco, HP & IBM)
4. Add 74 figures to represent population growth
5. Take off two orchards and return to Box 3 (Leave one in south county)
6. Take off 35 farm animals and return to Box 2 (Leave 5 in south county)
7. Flip wastewater treatment plants to purple side for recycling

# Silicon Valley (1970 - present)

## POINTS TO DISCUSS

1. Population increases to 1.8 million (180 figures on map)
2. Hi-tech replaces farming—take off orchards and 35 farm animals
3. Flip over water drops (brown) to recycled water drops (purple)
4. **What caused life to change:** population growth and global warming

## TEACHER FACTS

- 1972 Wild and Scenic Rivers Act becomes state law. Clean Water Act enacted as federal law.
- 1974 Penitencia Water Treatment Plant opens.
- 1977 Palo Alto Reclamation Facility dedicated and Gilroy Water Reclamation Facility goes into operation.
- 1978 San Jose Pollution Control Plant adds processes to recycle water.
- 1980 Population, 1,295,071 (130 figures)
- 1980's Many hi-tech companies, like Apple, Hewlett Packard, Cisco and Intel, begin operations leading Santa Clara County to become the "Silicon Valley."
- 1989 the Santa Teresa Water Treatment Plant comes online.
- 1990 Population, 1,497,577 (150 figures)
- 1994 South County Regional Wastewater Treatment Plant built
- 1995 South Bay Water Recycling project begins.
- 2000 Population, 1,682,585 (170: 50% white; 3% black; 24% Asian; 23% Hispanic)
- 2005 Ohlone population 1400
- 2008 Population, 1,800,000 (180 figures)

## TOPICS FOR FURTHER STUDY

- Describe ozonation. How is it different from chloramine?
- Why did the high-tech companies come to Santa Clara County?
- What is the purpose of the high-tech companies?
- What is water recycling? Why is it important?

# Conservation Legacy?? (2007 - 2050)

## MUSIC

Afterdark Disk 1: City People

## SCRIPT

**Leader:** What will happen? What does the future hold?

**All:** It's up to us to be bold!

Student 1: As the population continues to grow

Student 2: The search for water will not slow.

Student 3: Population density will increase

Student 4: Not 12 units per acre (Mt. View), 25 at least.

Student 5: "Smart growth" is walking when you could ride.

Student 6: "Infill" and "up" so our worlds (animal habitat and human habitat) don't collide.

Student 7: Global warming is what we face.

Student 8: There's evidence enough for the human race.

Student 9: So we must plan and we must conserve,

Student 10: If all are to get what they deserve.

Student 11: Will we desalinate water so we have enough?

Student 12: Will we limit growth; these decisions are tough!

Student 13: Restoring the land; bringing wildlife back

Student 14: Tells us that we're on the right track.

Student 15: Stream corridors will widen; they will grow

Student 16: Protecting wildlife is the goal.

Student 17: Name the things that you will do.

Student 18: 'Cuz you must know it's up to you!

Student 19: How do we want our world to look?

Student 20: It's time we made our own guide-book.

**Leader:** If you could speak for the future today, What have you learned? What will you say?

**All:** We'll find new sources and conserve the old; every drop of water is "liquid gold."

## MUSIC

Afterdark Disk 2: Caffeine Sunshine (Music plays as students place the contents of Box 6 on the map)

## MAP

1. Add 30 habitat species trading cards
2. Add 82 figures to represent population growth

## Conservation Legacy?? (2007 - 2050)

### POINTS TO DISCUSS

1. Smart growth, infill and up—urban planning and transportation theories that concentrate growth in the center of a city, filling in vacant lots, putting apartments on top of businesses, building units higher for more rather than urban sprawl.
2. Global warming—rising temperatures, less snow pack, increased runoff; lack of storage
3. Desalination—taking salt out of ocean water, expensive but perhaps necessary for future growth
4. Stream corridors—riparian areas alongside creeks and streams bring wildlife back to urban areas; maybe dangerous
5. [What will cause life to change:](#) answers may vary

### TEACHER FACTS

- There are many restoration projects
- There are many mitigation projects.
- 2050 projected population, 2,624,670 (260 figures)

### TOPICS FOR FURTHER STUDY

- Describe “smart growth.”
- What is global warming?
- What is desalination?
- Describe “population density.” What are the pros and cons of increasing population density?



Name: \_\_\_\_\_

# Student Reflection Sheet

## Native Americans (3200 B.C.-1769 A.D.)

1. What was interesting about this period? \_\_\_\_\_
2. Would you like to have lived during this period? Yes No  
Why or why not? \_\_\_\_\_
3. What caused the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

## Spanish and Mexican period (1769-1848)

1. What was interesting about this period? \_\_\_\_\_
2. Would you like to have lived during this period? Yes No  
Why or why not? \_\_\_\_\_
3. What caused the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

## Statehood of California (1848-1900)

1. What was interesting about this period? \_\_\_\_\_
2. Would you like to have lived during this period? Yes No  
Why or why not? \_\_\_\_\_
3. What caused the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

## Valley of Heart's Delight (1900-1970)

1. What was interesting about this period? \_\_\_\_\_
2. Would you like to have lived during this period? Yes No  
Why or why not? \_\_\_\_\_
3. What caused the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

## Silicon Valley (1970-2007)

1. What was interesting about this period? \_\_\_\_\_
2. Do you like living during this period? Yes No  
Why or why not? \_\_\_\_\_
3. What caused the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

## Conservation Legacy? (2007-2050)

1. What is interesting about this period? \_\_\_\_\_
2. What can you do to make this a great time to live? \_\_\_\_\_
3. What will cause the biggest change during this period? \_\_\_\_\_  
Explain your answer: \_\_\_\_\_

# Order of Music to be Played

## Native Americans (3200 B.C.-1769 A.D.)

Tribal Winds: Creator's Prayer

Tribal Winds: Circle of Life

## Spanish and Mexican period (1769-1846)

McNeil Vol. 1 Disk 1: Muineira d'a Fonte

McNeil Vol. 1 Disk 1: Cielito Lindo

## Statehood of California (1848-1900)

McNeil Vol. 1 Disk 2: My Darling Clementine

McNeil Vol. 1 Disk 2: Sacramento

## Valley of Heart's Delight (1900-1970)

McNeil Vol. 2 Disk 1: California Here I Come

McNeil Vol. 2 Disk 2: San Francisco

## Silicon Valley (1970-2007)

Billboard Disk 1: The Way It Is

Billboard Disk 2: New World Man

## Conservation Legacy? (2007-2050)

Afterdark Disk 1: City People

Afterdark Disk 2: Caffeine Sunshine

# Glossary

**Capital:** the seat of government

**Chloramination:** formed during a reaction between chlorine (Cl<sub>2</sub>) and ammonia (NH<sub>3</sub>). Drinking water odor and flavor have improved by the application of chloramines which are also used for disinfection

**Chlorinate:** to add chlorine to disinfect drinking water

**Clan:** a number of households whose heads claim a common ancestor

**Conservation:** a careful preservation and protection of something; planned management of a natural resource like water to prevent exploitation, destruction or neglect

**Density:** the average number of individuals or units per space unit (a population density of 500 persons per square mile)(a housing density of 10 houses per acre)

**Desalinate:** process of removing salt from ocean waters

**Disinfection:** to free from harmful microorganisms

**Effluent:** waste material discharged into the environment

**El Camino Real:** roadway built by the Spanish to connect the missions in California

**Filtration:** the process of passing through a filter

**Flocculate:** to cause to form a mass of a number of finely suspended particles

**Global warming:** rising temperatures world-wide

**Hi-tech:** scientific technology involving the production or use of advanced or sophisticated devices especially in the fields of electronics and computers

**Imported water:** bringing water from its source to another place (Water that is brought from northern California to the Santa Clara Valley via rivers and aqueducts)

**Independence:** not subject to control by a larger unit; the quality or state of self-rule

**Infill:** the growth of a city by filling in vacant lots rather than urban sprawl

**Mission:** a local church or parish built by a religious organization to propagate its faith or carry on humanitarian work

**Orchard:** a planting of fruit trees or nut trees; also the trees of such a planting

**Ozonation:** Ozone is used in the process to clean drinking water

**Ranchero:** small farm

**Recycled water:** waste water passed through a series of processes in order to regain it for human use

**Reservoir:** an artificial lake where water is collected and kept in quantity for use

**Sedimentation:** settling; the process of forming sediments

**Smart growth:** an urban planning and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including mixed-use development with a range of housing choices.

**Subsidence:** a downward movement of the ground surface caused by solution and collapse of underlying soluble deposits; a sinking or settling of the ground surface

**Treatment plant:** a facility where water is cleaned for human use

**Tule:** either of two large New World bulrushes growing on overflowed land

**Vegetation:** plant life

**Wastewater:** water that has been used; sewage

**Wildlife:** living things that are neither human nor domesticated; especially mammals, birds and fishes

**Windmill:** a wind driven water pump



# Los Indígenas Americanos

Líder: ¿Saben ustedes quienes vivieron hace mucho tiempo aquí?

Todos: Los indígenas americanos fueron los primeros en hacerlo así.

Líder: ¿De dónde vinieron? ¿A dónde se fueron? ¿Qué ha sucedido? ¿Porqué desaparecieron?

Estudiante 1: Los indígenas estuvieron aquí por miles de años y más.

Estudiante 2: “La gente del Oeste”, los Ohlone eran gente de paz.

Estudiante 3: Dicen que 10,000 personas vivían en la bahía.

Estudiante 4: Cazando, nadando, y pescando todos los días.

Estudiante 5: Habían muchas tribus o grupos o clanes que vinieron.

Estudiante 6: En este valle donde estamos ahora algunos se establecieron.

Estudiante 7: Juntaban frutas y bayas, y cazaban venados y osos.

Estudiante 8: Tenían cantidad de agua, no necesitaban pozos.

Estudiante 9: Si un arroyo se secaba, podían mudarse a otro lugar en un día.

Estudiante 10: Porque no eran muchas cosas las que ellos tenían.

Estudiante 11: Junto a los arroyos y a los ríos construían sus chozas.

Estudiante 12: Hacían lanchas de tule y compartían sus sueños en esta tierra hermosa.

Líder: Si los indígenas americanos pudieran hablarnos ahora, ¿que nos contarían?, ¿que dirían?

Todos: ¡Tenemos Agua!

# Los Españoles y Los Mexicanos

Líder: ¿Quiénes le siguieron a los indígenas? ¿Quiénes llegaron esta vez?

Todos: Los españoles primero y los mexicanos después.

Estudiante 1: Los españoles llegaron en 1769. (mil setecientos sesenta y nueve)

Estudiante 2: Muchos indígenas americanos en esa época mueren.

Estudiante 3: Los españoles construyeron ranchos con vacas y bestias para trabajar.

Estudiante 4: Ellos tenían suficiente agua, no necesitaban excavar.

Estudiante 5: Los padres construyeron misiones, en esta región;

Estudiante 6: Convirtieron a muchos indígenas a su religión.

Estudiante 7: El Camino Real era un camino que ellos construyeron para que viajaran.

Estudiante 8: Hicieron que los indígenas regaran, para que los árboles junto al camino no se secaran.

Estudiante 9: San José, Santa Clara y San Martín fueron fundadas.

Estudiante 10: En 1821, la independencia mexicana fue lograda.

Estudiante 11: California pasó a ser parte de la República Mexicana.

Estudiante 12: Pero luego llegó a ser parte de una tierra extraña.

Líder: Si esos españoles y esos mexicanos pudieran hablarnos ahora, ¿que nos contarían?, ¿que dirían?

Todos: Teníamos suficiente agua para cubrir nuestra necesidad. Construimos ranchos y ciudades para que pudiéramos tener éxito.

## California: Un Nuevo Estado

Líder: ¿Qué sucedió después? ¿Quiénes más llegaron a este lado?

Todos: El oro atrajo a miles que buscaban el oro anunciado.

Estudiante 1: El oro atrajo mucha gente a nuestro estado.

Estudiante 2: En 1848 no todos encontraron el oro tan deseado.

Estudiante 3: Pero encontraron un buen lugar en nuestro valle para vivir.

Estudiante 4: Plantaron huertas, construyeron vías de tren; pensando en su porvenir.

Estudiante 5: California fue robada de las manos mexicanas.

Estudiante 6: Fue dada a Estados Unidos en la guerra americana.

Estudiante 7: En 1850 se convirtió en el estado número 31. (treinta y uno)

Estudiante 8: San José fue nombrada la capital, la ciudad número uno.

Estudiante 9: Pronto, diez ciudades fueron fundadas; todas eran nuevecitas.

Estudiante 10: Alviso, Los Gatos, Mountain View, y también Milpitas,

Estudiante 11: fundaron Saratoga, Gilroy, Palo Alto

Estudiante 12: también Campbell, Morgan Hill, y Cupertino mientras tanto

Estudiante 13: Y excavaron el primer pozo; y encontraron más agua debajo del suelo.

Estudiante 14: Los molinos de viento se hicieron comunes, bombeando el agua del subsuelo.

Estudiante 15: Sesenta mil personas compartían ahora este hermoso espacio.

Estudiante 16: Nuestro valle estaba cambiando, pero iba un poco despacio.

Líder: Si los primeros californianos pudieran hablarnos ahora, ¿que nos contarían?, ¿que dirían?

Todos: ¡Excavamos el suelo! ¡Encontramos agua en el suelo. Es el único “oro líquido” que encontramos!

## El Valle del Deleite del Corazón

Líder: ¿Qué sucedió después? ¿Llegó más gente aquí a vivir?

Todos: Muchos llegaron buscando una forma de sobrevivir.

Estudiante 1: El Valle de Santa Clara fue llamado el Valle del Deleite del Corazón.

Estudiante 2: La vida silvestre se veía por todos lados y mucha vegetación.

Estudiante 3: Más ciudades se establecieron; Sunnyvale, Los Altos, Los Altos Hills y Monte Sereno.

Estudiante 4: Cada ciudad es diferente, todas con diferente terreno.

Estudiante 5: En 1921 Fred Tibbets fue contratado,

Estudiante 6: Para asegurar que hubiera agua para todo el estado.

Estudiante 7: Diez presas y reservas acuáticas fueron construidas para la conservación.

Estudiante 8: Y el agua fue puesta en pozas grandes para su filtración.

Estudiante 9: Dos plantas de tratamiento de aguas negras fueron luego instaladas.

Estudiante 10: Aquellos que contaminan el agua se les cobra una multa elevada.

Estudiante 11: La primera agua importada llegó de San Francisco finalmente.

Estudiante 12: La obtuvieron de Hetch Hetchy, de las corrientes de Yosemite.

Estudiante 13: También obtenemos agua del gobierno federal y estatal.

Estudiante 14: La mitad de nuestra agua es importada en nuestro sistema actual.

Estudiante 15: Ochenta millones de galones de agua son tratados diariamente.

Estudiante 16: En la Planta Rinconada de Tratamiento del Agua, para toda la gente.

Estudiante 17: Tratar el agua con cloro, flocular y quitar los sedimentos.

Estudiante 18: Filtrar, y desinfectar finalmente a través de la cloraminación es parte del tratamiento.

Estudiante 19: Para 1970 la población había crecido.

Estudiante 20: Con más de un millón de personas, es bien sabido.

Líder: Si esas personas pudieran hablar con nosotros ahora, ¿que nos contarían?, ¿que dirían?

Todos: ¡Importamos el agua! Construimos presas. La acumulación del agua estaba en nuestros planes...

# El Valle del Silicio

Líder: ¿Luego que pasó? ¿Ya se acabó la historia?

Todos: Escuchen todos los cambios, y guárdenlos en la memoria!

Estudiante 1: Hay más agua y plantas de tratamiento de aguas negras.

Estudiante 2: La gente sabe que es importante y eso realmente me alegra.

Estudiante 3: La ozonización se usa para limpiar el agua actualmente.

Estudiante 4: Es más caro, pero sabe mejor. Indudablemente!

Estudiante 5: La población sigue creciendo cada día.

Estudiante 6: ¿Hasta dónde llegará, no sabemos todavía?

Estudiante 7: Las compañías de alta tecnología se instalaron.

Estudiante 8: Apple, Intel, y Hewlett Packard comenzaron.

Estudiante 9: La población sigue creciendo cada día.

Estudiante 10: ¿Hasta dónde llegará, no sabemos todavía?

Estudiante 11: El reciclaje del agua ha comenzado.

Estudiante 12: Nuestra provisión de agua se ha incrementado.

Estudiante 13: Los chorros de agua que salían de las plantas se iban a la bahía.

Estudiante 14: Ahora todos ellos se reciclan, ¡y eso nos da alegría!

Estudiante 15: Pronto serán usados por todos, espero que con cordura.

Estudiante 16: Cuando se termine de construir toda la infraestructura.

Estudiante 17: El Valle ha cambiado mucho en los últimos cuarenta años.

Estudiante 18: Si se nos acabara el agua sufriríamos muchos daños.

Estudiante 19: El Valle del Silicio se le llama actualmente.

Estudiante 20: En el sur de la bahía viven 1.8 millones de gente.

Líder: Si todas esas personas pudieran hablar con nosotros hoy, ¿que nos contarían?, ¿que dirían?

Todos: Aprendimos a conservar. El agua es preciada. Ahorren hasta la última gota. El desperdicio de agua tiene que parar.



## ¿Legado de Conservación?

Líder: ¿Qué sucederá? ¿El futuro qué nos traerá?

Todos: ¡Nos toca ser audaces. Esa es la verdad!

Estudiante 1: Al continuar el crecimiento de la población.

Estudiante 2: La búsqueda del agua no irá en disminución.

Estudiante 3: La densidad de la población aumentará.

Estudiante 4: No a 12 unidades por acre (Mt. View), 25 o hasta más.

Estudiante 5: “Crecimiento inteligente” quiere decir caminar aunque puedas manejar.

Estudiante 6: Rellenar los baldíos y construir hacia arriba para que nuestros mundos (habitat animal y habitat humano) no tengan que chocar.

Estudiante 7: El calentamiento global es a lo que nos enfrentamos.

Estudiante 8: Suficiente evidencia existe para nosotros los humanos.

Estudiante 9: Entonces debemos planear y debemos conservar.

Estudiante 10: Para que cada uno tenga lo que ha de utilizar.

Estudiante 11: ¿Desalinizaremos el agua para que tengamos suficiente?

Estudiante 12: Si limitamos el crecimiento, será una decisión inteligente.

Estudiante 13: Si restauramos la tierra, y traemos de nuevo la vida silvestre.

Estudiante 14: Estaremos en la ruta correcta si lo hacemos sabiamente.

Estudiante 15: Los canales de las corrientes se harán mas amplios, y crecerán.

Estudiante 16: Proteger la vida silvestre es la meta que se buscará.

Estudiante 17: Nombra las cosas que tú harás para el porvenir.

Estudiante 18: Pues debes saber que a ti también te toca decidir.

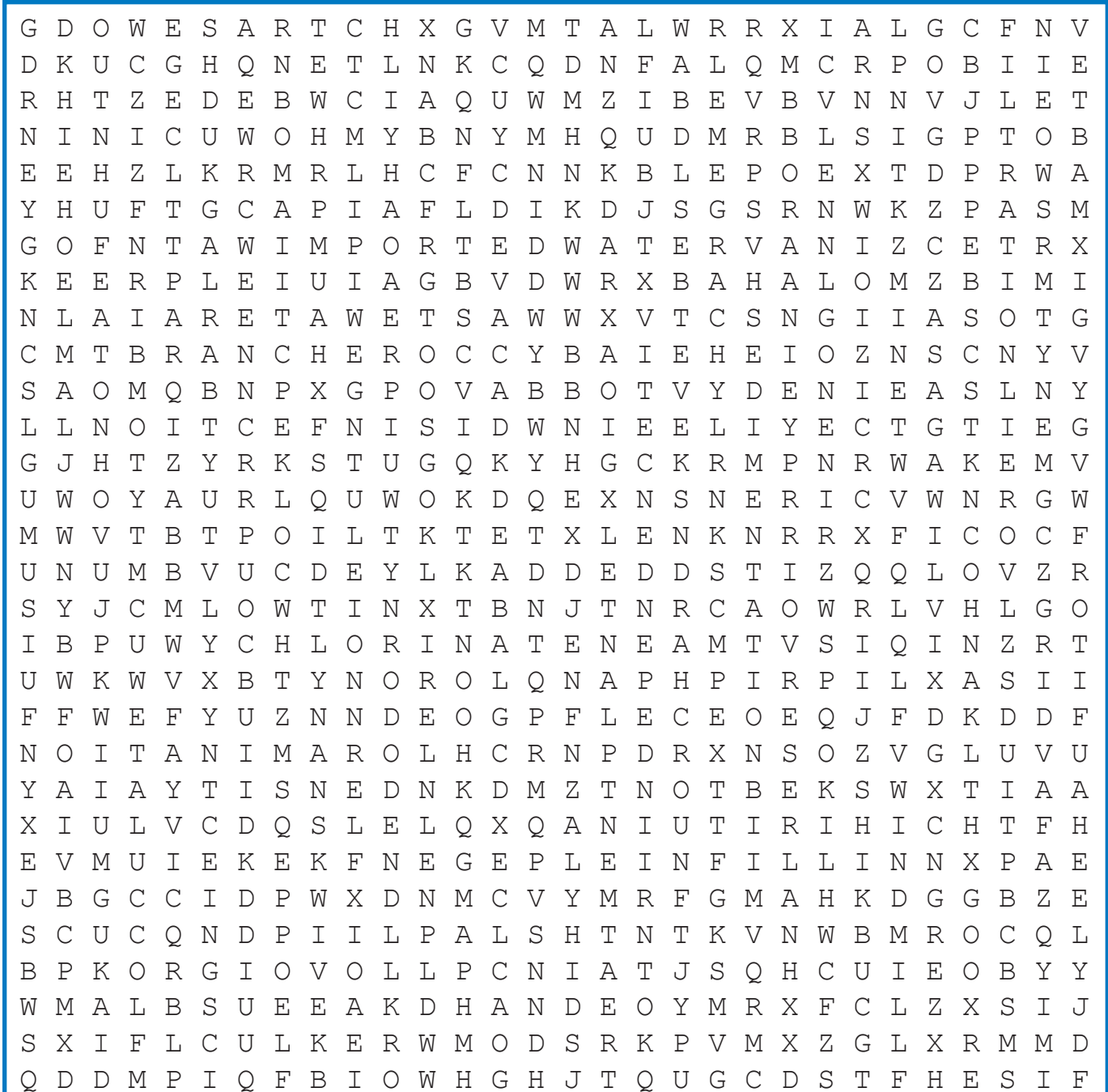
Estudiante 19: como queremos que se vea nuestro mundo amado.

Estudiante 20: Ya es hora de hacer nuestro propio plan, muy bien organizado.

Líder: Si pudieras hablar para el futuro ahora, ¿Qué cosa has aprendido? ¿Qué dirás?

Todos: Encontraremos nuevas fuentes y conservaremos las antiguas; cada gota de agua es “oro líquido”.

# Mapping History of the Santa Clara Valley WORD SEARCH



CAPITAL  
CHLORAMINATION  
CHLORINATE  
CLAN  
CONSERVATION  
DENSITY  
DESALINATE  
DISINFECTION

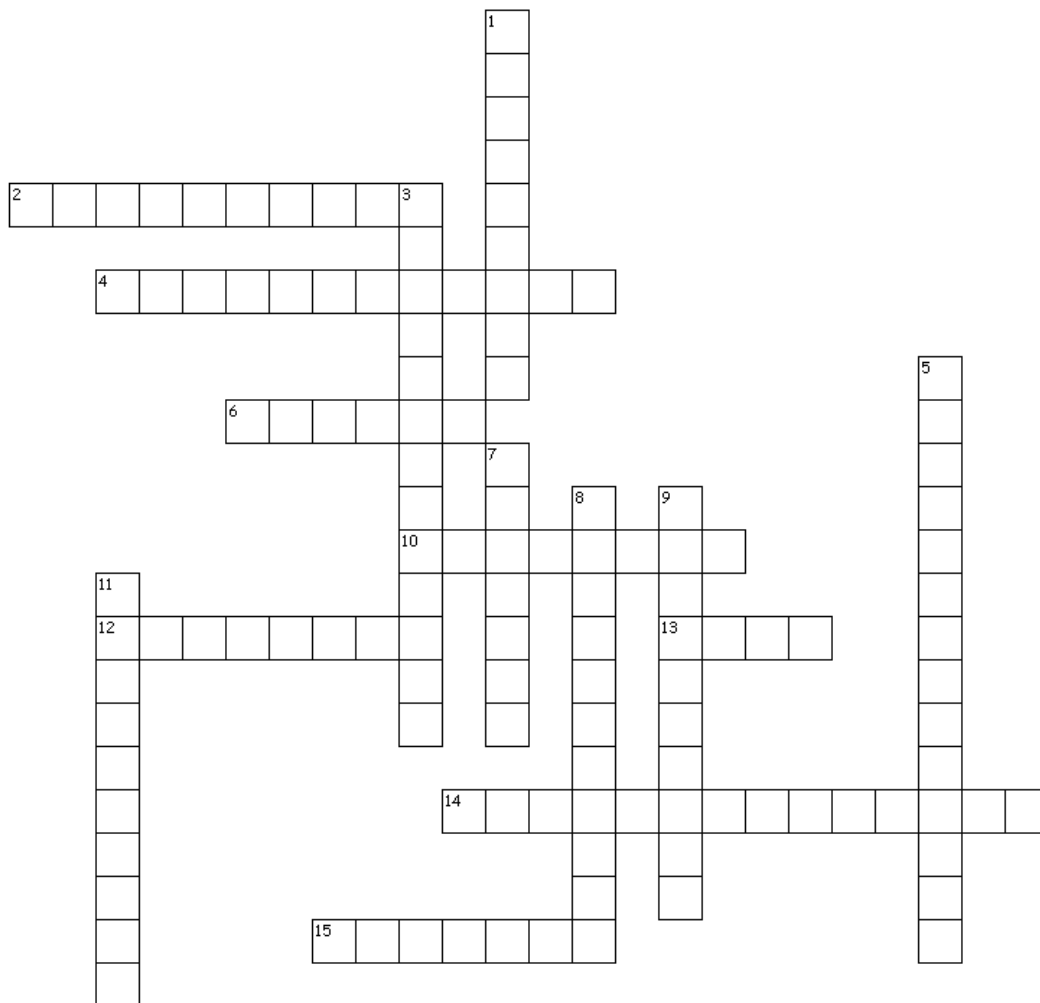
EFFLUENT  
EL CAMINO REAL  
FILTRATION  
GLOBAL WARMING  
HI-TECH  
IMPORTED WATER  
INDEPENDENCE  
INFILL

MISSION  
ORCHARD  
OZONATION  
RANCHERO  
RECYCLED WATER  
RESERVOIR  
SEDIMENTATION  
SMART GROWTH

STREAM CORRIDOR  
TREATMENT PLANT  
TULE  
VEGETATION  
WASTEWATER  
WILDLIFE  
WINDMILL

# Mapping History of the Santa Clara Valley

# CROSSWORD



## Word List

chloramination  
clan  
density  
desalinate  
disinfection  
effluent  
flocculate  
hi-tech  
infill  
ozonation  
recycled water  
smart growth  
stream corridor  
wastewater  
windmill

## Across

2. water that has been used; sewage
4. to free from harmful microorganisms
6. the growth of a city by filling in vacant lots rather than urban sprawl
10. a wind driven water pump
12. waste material discharged into the environment
13. a number of households whose heads claim a common ancestor
14. formed during a reaction between chlorine (Cl<sub>2</sub>) and ammonia (NH<sub>3</sub>)
15. scientific technology involving the production or use of advanced devices in the fields of electronics

## Down

1. ozone is used in the process to clean drinking water
3. waste water passed through a series of processes in order to regain it for human use
5. a narrow strip of land on both sides of a creek or stream
7. the average number of individuals or units per space unit
8. urban planning and transportation theory that concentrates growth in the center of a city
9. to cause to form a mass of a number of finely suspended particles
11. process of removing salt from ocean waters

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**Water in the Santa Clara Valley: A History** (2nd edition)

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# Materials List

Period	Item(s)	Vendor	Additional Notes
	12' x 12' map of Santa Clara County	Home Depot	acrylic paint on white painter's canvass by Victoria Fortune ( <a href="mailto:vfortune@valleywater.org">vfortune@valleywater.org</a> )
	Period music		See Bibliography and script
Native American	Wildlife figures (40)	Lakeshore	<a href="http://www.lakeshorelearning.com">www.lakeshorelearning.com</a> Classic Forest Animal Collection glued to 1/2" washers
	Small trees	Michaels	Glued to wood by Scott McKnight ( <a href="mailto:smcknight@valleywater.org">smcknight@valleywater.org</a> )
	Human figure (1)	Lakeshore	Native American Family (Block Play People) glued to 1/2" washers so they would stand up
Spanish and Mexican	City markers (3)		Logos downloaded, laminated and glued to blocks of painted wood by Scott McKnight
	Missions (2)		Constructed by Scott McKnight
	Roadway	Michaels	
	Trees	Michaels	Glued to wood by Scott McKnight
	Farm animals (40)	Lakeshore	Classic Farm Animal Collection
	Human figure (1)	Lakeshore	Hispanic Family (Block Play People)
Statehood of CA	Orchards	Michaels	Glued to wood by Scott McKnight
	Train engines (2)		Hobby store for trains
	Windmills (6)		Constructed by Scott McKnight
	City markers (10)		See above
	News boxes (2)		Hobby store for trains; newspaper downloaded
	Human figures (5)	Lakeshore	White family (Block Play People)
Valley of Heart's Delight	Reservoirs (10)		Constructed by Scott McKnight
	Wastewater treatment plants (2)		Wood water drops painted brown on one side and purple on the other ( Scott McKnight)
	Water treatment plant (1)		Blue, wood water drop ( Scott McKnight)
	City markers (3)		See above
	Human figures (100)	Lakeshore	<a href="http://www.lakeshorelearning.com">http://www.lakeshorelearning.com</a>
Silicon Valley	Water treatment plants (2)		Blue, wood water drop (Scott McKnight)
	Wastewater treatment plants (2)		Wood water drops painted brown on one side and purple on the other (Scott McKnight)
	Hi-tech companies (6)		Constructed by Scott McKnight modeled on home offices; company logos downloaded and laminated
	Human figures (74)	Lakeshore	Block Play People glued to 1/2" washers so they would stand up
Conservation	Human figures (82)	Lakeshore	See above