

ANALYSIS of RECENTLY-RELEASED 10 Strands K-8 History-Social Science Units

From "Education and the Environmental Initiative Curriculum"

To access the UNITS discussed, go to <https://tenstrands.org/eeicurriculum/curriculum>

Click on "Education and the Environmental Initiative Curriculum;" then Click on "History-Social Science Units," for Text ,graphics, maps, photos, booklets, cards, dramas, games, charts, activities, visual aids, worksheets, and assessments., some in Spanish. For more information:

Access:<http://www.californiaei.org/Resources>

These **10 Strands** History and Social Studies material are first steps to merging Environmental Issues, Environmental Justice, and Climate Change into California's K-8 curriculum. Teachers who feel they don't have enough information to plan environmental lessons will see there is more than enough; many activities and projects, many exciting, fun, and creative ways to learn, easily related to what they're already teaching. This material can be used for short every-day units, an hour or so once a week, in blocs, or week-long "Intensives." There are choices of worksheets, tests, and activities. Teachers are encouraged to individualize, incorporate their own material, and use the Alternative Assessments, best suited to students.. Students who work with the amazingly beautiful images and engage in the simulations, art, and creative writing activities will come to love the beauty and diversity of California, perhaps the first step to saving it!

These K-8 level Units provide background so students can understand what is happening today, and envision a better future. **But they are incomplete, and must be built upon.** For Students to research local community problems, and work with families and groups to solve them, is a major goal of environmental education. Local media, newspaper articles, and newsletters from community organizations are up-to-date sources. There are very important facts and ideas, newly discovered material, and other environmental curricula.that are omitted and teachers must fill in.

Example: Units comparing salinization of ancient farmlands, and the San Joaquin Valley today give no detailed explanation of how salinization works, how it can be prevented; or how soil can be restored. Over-simplification of issues such as deforestation, with no possible solutions, such as selective harvesting and seed trees, no examples of reforestation and no explanation of how ecosystems support life aren't helpful. When students understand how systems work, even the youngest do creative problem-solving. (*Unit 6, *Agricultural Advances in Ancient Civilizations, Les.5, pp.103-105*)

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Omissions are a problem. There is little in-depth explanation or analysis of environmental issues, their effects, necessary changes, possible solutions, future projections.or attempts to inspire positive action by students. Environmental Injustice, and the racism that causes it,are invisible or minimized..These are things that students need to know, especially in California where 21.7% of public school students were white, 5.2% were Black,11.9% were Asian, and 58.4& were Latino/a in 2021.

The strangest omissions are that there is nothing about African-Americans in all these pages, not related to the Gold Rush, no Bidy Mason, of L.A., nor Col. Allensworth, murdered on his way to Court to appeal for the water white settlers had stolen from his thriving Tulare community. Latino/as are invisible.also, though they were terrorized by vigilantes, segregated, forced to pay "foreign" mining taxes when they were citizens, deported, regardless of status and did 70% of early 20th Century & post- Depression farmwork, 66% of manufacturing, textiles, food processing, steel production, construction, car repair, and personal service work.)

There is no Tiburcio Vazquez,the California Robin Hood, fighting for freedom. The Chinese, mentioned in one short section,are absent from the Gold Rush, the L.A. Massacre, and segregation laws. Besides the shepherding Basques, where are the other immigrants who built California.? Their

descendants are the victims of racist zoning and construction patterns that continue today. Students must understand deliberate racism, in order to end it.

10 Strands:Comments, Suggestions, and Omissions from Selected Units:

Unit K: “Some Things Change and Some Things Stay the Same:” TB-California’s major urban areas and farmlands depend on water pumped from the San Joaquin– Sacramento River Delta, which endangers fish, and the entire ecosystem that supplies 25 million Californians with water. Water agencies will be forced to impose restrictions on water use. (p.10)

(*This has happened and these restrictions are becoming incrementally severe. June 2022*)

-Transportation fuel use causes the largest portion of California’s greenhouse gas emissions. (p.10)

(*Agriculture (especially meat production)is now the biggest emitter of Greenhouse gasses, June, 2022.*)

“There appears to be a close relationship between the concentration of greenhouse gasses in the atmosphere and global temperatures.”(This phrasing casts doubt on facts.) It should be, “There **IS** a close relationship”) CO₂ and many other chemicals released from fossil fuel combustion absorb infrared energy, which cannot escape from the earth, causing earth’s atmosphere to heat up. This has been documented since the Industrial Revolution (late 1800’s) but earth’s most rapid heating has occurred in the last 20 years.(p.10) These higher temperatures cause more rain, increased flooding, and less snowpack, resulting in less water for hydroelectric power and water pollution,agricultural contamination, and damage to infrastructure. Loss of wetlands is especially serious because 90% of them were destroyed by settlers who didn’t understand their role in filtering water and preventing soil erosion and floods.The United States’ remaining 10% of wetlands are threatened by climate change. (p11)

OMISSION: None of this information appears in the student lessons, which should be part of Teachers’ Background

UNIT K: “Some Things Change and Some Things Stay the Same”

Lesson 1: “A Look at Our School” helps kindergartners compare differences in the past and present.. They begin by comparing photographs from *Our School and Our Town* (about life in their small town 100 years ago. Students compare classrooms, libraries, playground games, and transportation in the 1800’s to those of the present.(pp.32-33)

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Lesson 2: “Life & School in Earlier Days” shows products from primary sources;to compare with ready-made items from stores. Families raised chickens, milked cows, hand-washed laundry, sewed clothes; grew and preserved produce. Children helped. People built their own fences, sheds, ponds, and toys. Today manufactured products predominate over diverse natural ecosystems, changing or eliminating them. Teaching children to understand change from past to present helps them envision changes in the future.Next, they construct a mural:using old and recent photos to compare their town and school using their own observations and family input: multi-story buildings,faucets replacing pumps, electric lights, power tools, cars and paved roads replacing horse trails, and parking lots eliminating grass and the natural systems of food, water cycles and filtration, pollination of ecosystems.and the weathering of rocks that creates soil which they have always depended on to survive. (pp38-39)

Suggestion: Outdoor Education and “Make it Yourself” activities fit in here.

Lesson 3:Next students learn what happens“**When a Community Grows.**”.(Effects of Consumption) Students use beans in paper cups to represent water, and move their paper houses into the Community Space they have decorated. Crowding creates scarcities they must solve: they need more water sources.The Mural Canvas reminds them they also need clean air, houses. transportation, food, clothing. etc.(pp 60,61)

Lesson 4: “Managing the School’s Resources.” They tour the school to learn how resources are used. Staff visits classrooms to explain their jobs keeping resources clean and healthy, and how the school functions. Students learn how water, energy, and food are top costs and how materials must not be wasted. Then they write about what they have learned.(pp.68-69)

Suggestion: Student recycling and composting are the next steps.

UNIT 1: “On the Move:”TB_Gasoline-burning Internal combustion engines power most automobiles today. Gasoline is made from crude oil, which occurs naturally in earth’s rock formations. It is “nonrenewable” because we use far more than earth can produce in our time. Like coal and natural gas, oil is a fossil fuel that is formed from decomposing remains of living things and takes millions of years to form naturally.” There is an excellent explanation of how the internal combustion engine works, and a mention (without explanation) of hybrid cars which are becoming more popular, and operate on both electric motors and gasoline”.(p12) Motor vehicles destroy ecosystems because roads and parking lots cover urban and suburban areas. Pavement covers one out of ten acres of the U.S.’ arable land. (p 12) There is information on the problems of reusing or disposing of used tires.

OMISSION: No mention of how gas burning vehicles destroy earth’s atmosphere; or explanation of alternative fuels, so it seems that paving land for roads and parking places is the most serious problem.

Unit 1 Lesson 3 “Getting There” TB Very interesting, explanation of how an internal combustion engine works (with photographs) The lesson does state that modern transportation systems require much more energy than those of the past. Animals used in the past to pull coaches or carry riders made few carbon emissions and fertilized and aerated farmland they crossed. (p.51)

OMISSION: No acknowledgment that burning carbon into the atmosphere is obsolete technology,

-UNIT 1 Lesson 4: “Ways and Means” shows the unifying influence of an efficient mailing system on the United State from carrying mail on buggies with horses, to the Pony Express a relay with riders passing mailbags from tired horses and riders to fresh ones, for speedy delivery. They were soon replaced by trains, riverboats, trucks, and planes.(p.69) There are many children that have never been to a Post Office, and many families who seldom use USPO. They use cell phone apps for banking. and e-mail for personal and business matters.

Suggestion: Perhaps students would identify more with a study of how people shop on-line, with purchases, including food, brought to the door by delivery trucks: ex: Fed Ex, Amazon, and UPS. Students discuss pros & cons, Teachers research energy.waste or saving.

UNIT 1: “People and Places:”TB: A positive, respectful description of how diverse groups of tribal peoples managed very different habitats and ecosystems, gently changing and controlling the land and wildlife that sustained them for more than 10,000 years, *but there is no mention of this in the student lessons.*(pp.8-10)

UNIT 2 “From Field to Table,”TB:

-Explains the relationship of California climate to agriculture, and how California agricultural practices changed landforms, water cycles, watersheds, wetlands, native species, biodiversity.(p.7,8).

UNIT 2 Lesson 1: "How Does California Grow?"(Need for land and water. Floods, droughts, freezes, and wind can cause short- term crop losses, and soil erosion and tree damage can cause long-term losses..(p.34,35). Students learn to identify stages of growing food.

OMISSION: Nothing about what causes global warming, or how it affects weather.Emphasis is on the importance of recycling tires, and the many products that can be made from them,

OMISSION: No mention of electric cars, other alternative fuels, or the obsolescence of burning fossil fuels. No mention of recycling the metals in motor vehicles.

(It is strange that several sections discuss how the internal combustion engine works, and the need to recycle used tires, but far more serious emissions of Carbon that warms the atmosphere are not mentioned.)

Suggestion: When gas and diesel are mentioned, their effect on the atmosphere should always be mentioned.

UNIT 2 Lesson 2: "Who Are You and What Do You Do?" (p 46-47) **One-line** mention of farmworkers as producers.

OMISSION:The majority of California's K-8 public school students are Latino/a, as are almost 90% of California's Farmworkers. Surely the farmworkers' contributions, struggle for better working conditions, and the migrant status of many should be a point of connection..

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UNIT 2: Lesson 3: "Population Growth Increases Agriculture " California's corporate agriculture industry produces products for people a great distance away, and Californians buy foods from great distances. Excellent Graphs. (p.68-69)

OMISSION: No mention of the environmental cost of transporting agricultural products, nor the benefits of locally-grown products.

UNIT 2 Lesson 4: "Then and Now" Explains the benefits of the invention of a tractor with an internal combustion engine, which was able to greatly increase production. Luther Burbank developed 800 new varieties of plants through:"cross-breeding" and "engineering." which led to the 1930 Plant Patent Act, the first in the world, and increased industrial farming's profit (p.79)

OMISSION: No mention of the effects of "mechanized farming on people or ecosystems. Patents on plants are very controversial. Many nations believe it is unethical to patent a living thing.(p.79) These patents cause starvation around the world because farmers break the law if they plant seeds grown from patented plants,and can lose their land or be sent to jail. They cannot afford patented seeds.. (Increasingly patented plants are genetically engineered to be sterile.)

UNIT 2: Lesson 5: "Choices and Changes:"TB." All natural systems are made up of interrelated parts. Explains what happens when people make changes without taking this into consideration. (pp 108-109) Examples: Heavy rains wash away stream banks, and eliminate habitat, causing species to relocate, as do temperature changes.Construction of a building in the wilderness influences the living spaces and food sources of many other living organisms, and can destroy an ecosystem.(pp 108,109) **Current**

examples recommended.

UNIT 3: “*California Indian* People: Exploring Tribal Regions: California Connections:* The indigenous nations saw natural and human life as inextricably connected; they had no concept of private property; the earth belonged to everyone. They were egalitarian, not class-stratified. People were different, but equal. Students learn how wisely the original Californians limited their hunting and trapping and used every part of the animals they killed for clothing, shelter, tools, and weapons. They protected various species, and numbers of trees and plants of various ages by careful burning, which eliminated pests and created meadows that produced edible seeds, and prevented forest fires. They maintained watersheds, which produced edible roots, teas, medicines, and material for boxes and baskets, ropes, tools, weapons, shelters, hats, and even toys. Coastal people built boats, hunted sea mammals, ate shellfish, and used shells for jewelry and money. They carved rocks, painted, and made bowls, and jars from clay. (pp 6-10) & TB (pp12-15)

Students create plays and write stories about life from the indigenous viewpoint. There are photographs and illustrations of flowering plains, volcanoes, snowy mountains, gigantic trees, deserts, rocky beaches and the animals they support. There are pages of unique artifacts for students to imagine using, There are maps of California’s regions, and charts of the plants in each one. Students consider the huge amount of resources that existed before the European conquerors arrived, and how carefully they were managed by the people who used them. Then they make books showing the changes in California’s regions. (pp 6-10) (All Units have similar excellent, varied, resources for students.

UNIT 3: “California’s Economy: Natural Choices:”TB

This unit shows, with past and present, photographs, the 13 major products and services that make California richer than most nations: cement, cotton, dairy products, grapes, lumber, oil, oranges, sand and gravel, seafood, tourism, and electronics. It explains how year-round mild weather, land that supports roads, and University support of the tech industry, helped the Silicon Valley become the birthplace of the modern computer. It lists human costs: salaries and other workers’ benefits, capital: the cost of producing what is being created, and natural resources (sometimes worth much more than what is paid for them.) as the 3 components of a successful business. Service Industries, e.g. water and waste management, are also important

.California is learning that outdoor recreational places must be protected from overuse and that the mining, drilling, production and consumption of non-renewable resources such as fossil fuels, leads to collapse. The text states that businesses involved in mining and drilling must carefully consider the degree to which their product influences human and natural communities.

All industries must respond to state and federal laws that regulate pollution; water and air quality. Environmental concerns are the basis for regulating land use and development, and the types and quantities of chemicals that can safely be released into the environment. (pp10-13

OMISSION: No explanation of how or what natural resources are worth much more than is paid for them! The only suggestion for solutions to destructive production practices is to plan well and be careful consumers. How? No details or suggestions. No suggestion of how this careful planning will happen, will be monitored, and enforced. There is no explanation of why there are so few Federal Regulations, and why the ones that exist are not strictly enforced.

UNIT 3: Commendation: “California’s Economy: Natural Choices” Reader: “So Many Decisions to Make.” Reader by Helen de la Maza :This fine booklet shows the decisions a woman planning to farm grapes must make:where to locate her farm; whether to recruit local or out-of-area workers, how to gauge water needs, and deciding to use predator beetles instead of chemical pesticides to control destructive insects. The book has many common Spanish phrases, defies stereotypes by making the farm-owning protagonist a woman, and illustrates ways to learn what will be the best decisions. The decision not to use insecticides to protect the people, other living things, and the water. are important concepts easily understood by young students. (Access on Index)

UNIT 3: Lesson 2: “What Comes from My County?” There are charts, graphs, and maps for each County with descriptions of, as well as excellent photographs of California products and industries, and the ecosystems that provide resources. Students will become proficient at reading maps, charts, and graphs in this lesson.)TB (pp 56-67)

OMISSION : Very little mention of environmental protection, when in-depth information is needed..

UNIT 3 :Lesson 3: “The Resources Our Industries Need and Use” **Suggestion:** The 26 Information cards with photographs that compare today’s industries with the same industries in the past are interesting and could be the beginning of some real environmental learning, projecting future changes by designing improved, modern factories. (pp 86-99) **Omission:** Again, no follow-up.

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Unit 3 Lesson 4 “Costs and Benefits of Doing Business” Seasonal workers are mentioned only as a complication for industrial farmers, with little description of who they are and the work they do. (p.13) “Sometimes the cost of natural resources is greater than the money paid for them.” Some natural resources are used up in the manufacturing process. In the 21st century, producers seem to be more aware of the effect that economic decisions can have on natural resources.(p.11) “Environmental costs associated with industries, for example, energy and mining, may also diminish the benefits available to the community.”(p.103) There are no examples.

OMISSION: This is weak & vague for a curriculum that’s supposed to be teaching environmental justice and climate change, as is the fact that oil extraction and production is shown as one of California’s major industries, with no mention of the pollution, and carbon emissions it causes.(Students become proficient at understanding graphics, however.).

UNIT 4: “California Indian Peoples and Management of Natural Resources,” **Overview:**This unit shows some of the thousands of environmental management practices of diverse cultures spread throughout the 7 Natural Regions of California, and the complex networks they developed for trade, including clamshell trade disk beads used for decoration, and trade.(pp.4-7) *Teachers’ Background* explains how they used burning to insure a minimal number of invasive animal species, and how they gathered seeds to establish necessary plants where more were needed. (8-10) and their many rules limiting the seasons and numbers of animals (including fish) that could be taken..

Lesson 4:“California Indians’ Worldview” explains concepts common to all California’s diverse regional groups:their philosophic understanding of the land, as a living part of creation, their familial relationship to all living things, and the creator.and their obligation to preserve all life. (pp102, 103).There are dozens of drawings and photographs of landscape, raw materials, beautiful, useful,

trade items, and historic photographs of plants and animals interspersed throughout each page of text and maps. Included are historic photographs of ancestors in traditional dress, and rock carvings depicting religious beliefs.

UNIT 4: “Cultivating California” Teachers’ Background *Hunting and gathering* is a subsistence lifestyle based on extraction and harvest of wild resources..Recent research shows that California *Indians* (an obsolete term) did more than “just hunt and gather.”They managed and cultivated plants and animals, influenced the distribution of abundance and diversity of animals they hunted, and promoted the growth of vegetation they valued. “Even so, their economy was generally that of a hunter-gatherer society.” (p. 10)

The title Page of “**Cultivating California**”states, “This Unit provides an environmental framework for discussing the role of the Franciscan missionaries in **changing** the economy of California, a narrow, bigoted viewpoint. The understatement: “Franciscans worked to sever Native tribes from traditional food and homelands.” and a painting of Indigenous people expressionlessly digging an irrigation ditch,are cover-ups for their enslavement and torture.

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(p.33) It states: “The missions were planned as a means of transforming California Indians into a peasant class of Catholics and to “Hispanicize” them. Missionaries accomplished this through a program of “reduccion,” which relocated them from dispersed villages. They moved thousands of people, who spoke mutually unintelligible dialects and languages into permanent structures. Indigenous people forced to live in closed, crowded rooms, were even more susceptible to diseases brought by soldiers and missionaries:smallpox, measles, black death, typhoid fever, flu, hemorrhagic fever and others By 1850, only an estimated 15% of Native Californians, fewer than 50,00 people remained.(p.13) When the missions closed,they had no identities, no legal nor political standing, no homelands as the United States had promised.(p.13)

Lesson 1 “California’s Changing Economy,” teaches that before European contact, “California Indian Societies practiced a hunter-gatherer strategy, foraging for wild foods. (Their) subsistence activities, however, involved more than hunting wild game or gathering wild plants” (They) ”practiced land management by tilling, burning, pruning, sowing, weeding, and transplanting.” p.33)

Lesson 2 :”**Hunters, Gatherers, Farmers, and Franciscans** “ “Although it may be an oversimplification, California Indians . . .had a hunter-gatherer economy and Franciscans missionaries introduced an agricultural economy”, which is based on “the cultivation and harvest of domesticated plants and animals; instead of the tribe holding rights to land, individuals own land.” Why is justifying the inaccurate term “hunter-gatherer” so important? Is it because private property is more “civilized?” Or is hunter-gatherer a term on the State Framework that this document must match.(p.42)

:Lesson 3: “Documents of Changing Lives:” Father Fermin Lassen was annoyed when he said that even if he gave them animals, and hundreds of bushels of food,Indians would be longing for their mountains and beaches.” The Indians agreed that it was true. At Mission

Santa Clara, the priest noticed that at the Mission, there was no reward for an excellent harvest. (p.70)

Lesson 4: “Mission San Gabriel’s Influence:” The Mission’s land included all of today’s Los Angeles, Orange, San Bernardino, and Riverside Counties with thousands of fruit trees, grape vines, and fields of wheat, corn, and beans. Ranchos grazed cattle, horses, sheep, goats, and pigs. Every one of the missions’ farming and ranching practices were destructive to California’s natural systems. Invasive European plants, weeds, and animals ruined the lands, making them vulnerable to fires, by forbidding controlled burning of weeds. and over-run with predatory rodents. There is no evidence of any attempt to restore soil. Settlers simply invaded new lands. (pp.72, 73). Excellent photographs, maps, diagrams, graphs, and art, teach this. (pp.81-88)

OMISSION: There is no explanation about how destruction could be avoided; soil renovated.

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Lesson 5: **Changing Natural Systems:** Teachers Background European livestock destroyed so much farmland that thousands were killed, to grow crops.. Wild goats and pigs ate the seeds Native Peoples planted, and the nuts they ate. Livestock polluted streams, and irrigation destroyed lakes and rivers. Having students consider the life of a “Mission Indian” and compare it with one who does not live at a Mission is an excellent way to help students understand what happened to these people, but since the natural ecosystems that supported the traditional ways of life were almost completely destroyed, they might have had to join a Mission in order to survive. “Caught by the mouth.” as one Franciscan described it, or worse, killed by a European disease. (pp 90,.91)

OMISSION: Indigenous Californians maintained the land and thousands of interconnected ecosystems to insure that there would be sufficient materials and food in the future. They used some of the resources, and saved some for trade, but they had no concept of farming and ranching as profit-making industries. Destroying the living environment they considered themselves a part of, was alien to their culture. It is important for students to consider the changes in sustaining life, from different points of view.

Lesson 6: “The End of Hunting and Gathering “This Lesson says almost nothing about the Indigenous Peoples except that they could no longer survive outside the money economy and that some worked on the farms and ranches of the “Californios” and were called “gente de razon” (“rational people”) for assimilating..

(When “Hunter-Gatherer” is used 3 times, there are explanations of why it is inaccurate, but its use is justified anyway! (Unit 4, Background, p.10 Lesson2 pp.33,42, Unit 6. Title page. Could it be necessary to identify people who are unfit for success, or “Hunter-Gatherer has to be used because it is on the State framework.)

What’s Wrong Here?

The Franciscans didn’t **introduce** agriculture; they **enforced** it with the Spanish military at gunpoint with chains and whips. They **enslaved** tribal people, **stole** the land they had preserved for thousands of years, **disrespected** their culture, **banned** their religion, **abused** their women and children, **broke up** families, There were at least 310,000 indigenous people in California when the Spanish arrived, 1769,

and by 1850, there were far less than 50,000, fewer than 20%.. (p.13).This is **both physical and cultural genocide, and it is barely mentioned.*** Europeans destroyed thousands of years of environmental protection, (burning chaparral to maximize seed producing grasslands and grow acorn and nut producing trees was forbidden; non-native species destroyed tribal food sources,) which kept them at the Missions. (p.91) European diseases killed thousands of Mission slaves, who had no immunity to them. When California became a U.S.territory,Indigenous people had no homes in the lands they had occupied for more than ten thousand years.

The Hlstory of the indigenous Nations of California stops when the Europeans and Americans kill most of them and eradicate their culture. But they're still here, many embracing the old ways, and struggling to preserve their languages. Only a few years ago, Indigenous peoples sponsored the *Universal Declaration of the Rights of Mother Earth*, which was adopted by the United Nations!.

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The U.S. ignored it all. There was no sorrow, no outrage, no condemnation of the injustice, no suggestion of reparations, no hint that this exploitation is going on today, as fracking and oil drilling in violation of treaties around this country continues to oppress our poorest people amid protests and police brutality. Of course graphic violence is not appropriate for our youngest students,, but the unfairness can be presented appropriately.And it's missing here! Children deserve to learn the truth.We need to show our students that these people are still struggling, and teach them how they can help..

Notes:

1. **Southern California:An Island on the Land by Carey McWilliams (1946)* describes Indigenous Peoples' lives at the Missions in great detail.(Still in Print)
2. "Native Americans" often refer to their ethnicities as "Nations" rather than Tribes, Indians, or Natives.

UNIT 4 : "Witnessing the Gold Rush:" Teachers Background: (pp.8-11) This unit documents the destruction of the environment, loss of farms and ranches, huge rise in population, shortages of necessities, rising crime rates An 1848 population graph shows only 1200 Indians in California; the 1850 graph shows none. There is no mention at all of the Chinese workers,terribly exploited in the Gold Rush, and afterward by California Law and vigilante justice.

Miners quickly learned to make larger and more efficient equipment, than the simple gold pan in which they swirled water and sand, to retrieve the heavier gold which sunk to the bottom.The large, heavy mining equipment increased consumption of water and trees.They diverted water far from river beds to operate mines. They were legally considered to own the "right" to the water their diversion systems used. Courts called these "Appropriative Rights.".Redirecting and damming waterways led to build-up of sediment, which threatened agriculture and local communities. There were no regulations, no licensing, no taxation, only rules made up by miners.that later became California law. There were many conflicts, a huge increase in crime, and vigilante justice. There was no infrastructure for thousands of people from all over the world:(From 1848-1850, California's population rose from 13,800 to 92,597 people) no roads, no housing, no transportation system, few stores. Forests were cleared and more wood was needed for buildings and fuel as the population expanded, (pp10,11) People needed authorities and regulations to protect them from violence, floods, and poisonous mercury (which bonded to gold) used in **hydraulic** mining which polluted the water, and concentrated in the bodies of fish and the entire food chain.but there were none. **Suggestion: This could be a springboard for researching the dangers of hydraulic fracking today.**

OMISSION: Though there is a picture of Chinese men mining, there is not one mention of the role of the Chinese, (and other immigrants) and how they were treated during the California Gold Rush.

Lesson 4: “ From Treasure Hunt to Industry;” :Mercury was not known to be toxic in the 19th and early 20th Centuries,(Map.95) and it is still found in the waters of California’s Central Valley, and the San Francisco Bay. (p.79) There are excellent descriptions and photographs of the destructive forces of hydraulic mining. how it affects the food chain, and maps of California waterways still polluted by Gold Rush mercury on information cards, and visual aids. (pp 87-94). 150 years later, with still no mention of any plan to clean up the mercury poison.in the Central Valley; only ”It must be carefully monitored and cleaned up when possible,” (p83)

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OMISSION: Hydraulic Fracking has been an issue, especially on indigenous lands for many years. It is one of the filthiest methods of mining crude oil, and produces a low grade oil product that takes a great deal of energy to process. Natural gas is also extracted this way, often polluting community water supplies and ecosystems

Suggestion: Compare Gold Rush mining practices to fracking, strip mining, and other earth-destroying practices.Students discuss how and why they are allowed to continue this way, and what ordinary citizens can do to insure environmental laws are enforced.

Lesson 5: **Flattening Mountains, Filling Valleys:** After 1860, hydraulic mining got worse: Streams filled up with “tailings,” (mine waste) , a flood on the Yuba River ruined the best farmland in the Central Valley by burying it under a thick sludge of sand and rock..It took until **1894**, for citizens’ groups made up of angry victims and supporters to push the Courts to ban hydraulic mining.(p 97)

Suggestion:A study of how they achieved this goal that should be added right here. !!

UNIT 5: “Human Settlement and the Natural Regions of the Eastern Seaboard” Overview:

California Connections: (Teachers’ Background_“Everything has always been beautiful.in Temecula.: the lands, the farms, the growing city, the relationships among people;”) is the impression given by this section.; although, “Natural resources are disappearing.” (p. 7) Pablo Apis, a Pechonga Indian who claimed land as a citizen, (early 1800’s)_ became a successful rancher and merchant. The railroad brought large numbers of settlers.(1880’s) “The United States government did not let the American Indians own just any land—they wanted (forced?) them to stay on land set aside by treaty. . .Many Pechanga Indians. . .moved to a small canyon . . .This land would become the Pechanga Indian Reservation.” A few years ago, a federal law gave 303 acres to the Pechanga people.(Temecula takes up 33,000 Acres.) The tribe has the right to use this land how they want. (“However, they are not always able to use the land and resources they way they want to, even though it is their land.” (p. 38) The City of Temecula has its own ideas about how the land should be used.” . . . “Temecula’s future depends on the decisions they (who?) make today”.(pp.6,7)

(-Students could predict, then research, what decisions were made, and by whom)

Commendation: It is unusual for History texts to compare such different areas and peoples, showing how indigenous people and settlers used natural resources differently, and how ecosystems’ goods and services shaped colonization. (p.5) **Suggestion:** Students could visualize how North America could have developed if the hard-working & needy Europeans had seen the Indigenous as equals.Imagine them working together.)

UNIT 5: Nature and Newcomers Teachers’ Background explains that ”Manifest Destiny” increasingly became a part of the American mentality. The settlement of the West was viewed as a right. Americans also considered it a responsibility to spread the democratic ideal, secure land for their children, and dominate global trade markets. (p.14) Historian Frederick Jackson Turner taught that Western American culture arose from the taming (destruction?) of the American wilderness; that created a heroic society based on democracy, individualism, hardiness, materialism, and optimism. Turner’s

“frontier thesis” led to the belief that American domination of the North American continent. was the will of God.. It has been has been challenged many times.” but is still widely accepted today (p.15)

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This view was supported by U.S policies: Speculators accumulated large tracts by purchasing public lands. The 1804 Land Act supported this by establishing the minimum purchase as 160 acres and set a price of \$1.60 per acre. The 1841 Pre-emption Act allowed “squatters” on unsurveyed public lands the “right of “first refusal” to purchase the lands they lived on once the government made its surveys.

Suggestion: This section answers the question that is rarely asked in US History classes: What gave the United States the right to seize the homelands of peoples who had occupied them for thousands of years? (Or did they really have that right?) Important discussions from various points of view could lead to imagining other ways our Nation could have developed.

UNIT 6: Agricultural Advances in Ancient Civilizations: Teachers’ Background

This unit explains ancient agricultural systems, comparing: California;s Central Valley to Mesopotami illustrating how tools and infrastructure develop from population growth, how cities push out farms, and the dangers of salinization, and depleted soil. California’s Central Valley is one of the greatest gardens on earth, and one of the most changed. We continue to depend on its natural systems for food and wealth, but in the same way the “Fertile Crescent” in Mesopotamia dried up and became a desert from soil salinization, thousands of years ago, the San Joaquin Valley, the Southern portion of the Great Central Valley, faces the threat of salinization today. (30% of all arable U.S. land faces similar problems). Over-use of the land and Climate Change cause salinization. Ancient farmers were legally bound to plant crops every year. This over- use of the soil led to accumulation of mineral salts, which made it unable to sustain life. (p10-11).

Archeological evidence shows that 300 years of intensive irrigation led to agricultural collapse along the Colorado River near the Southern California/Arizona borders hundreds of years ago. The people who build the irrigation system that can still be seen today are believed to be ancestors of the Hohokam tribal culture. This Unit mentions how overuse of agricultural land without restorative practices will cause salinization that depletes it.

“What may be the world’s greatest garden is also one of the most changed areas on Earth. Some of These changes are threatening the future of agriculture in California’s Central Valley.

California Connections, Teachers Background, (p.10), explains how accumulation of mineral salts in the fields of Mesopotamia turned the earth white because the soil was not allowed to replenish itself through natural means (“decomposition, aeration, etc.”) which (“*made changes* in the soil that have lasted until today.”) It goes on to state that California’s San Joaquin Valley is becoming desalinated, as is 30% of all arable U.S. land. (p 11)

OMISSION: This is a completely inadequate explanation (for teachers) of how land is replenished, as is the phrase “made changes in the soil,” which should have explained how it destroyed the soil’s fertility. Students should be learning about, and experimenting with, strengthening soil. An up-to-date viewpoint would explain composting, which the Los Angeles Department of Sanitation has made mandatory to replenish local soil, and composting toilets which have been used in the Southwest and far North for decades, as well as banning garbage disposals which turn nutrients into liquid, wastefully sent to the ocean. Teachers Resources (p11) ends on an inspirational note:” It is up to the innovative and creative nature of humankind to address this challenge to agriculture before what happened in Mesopotamia happens again,”

The Student material on salinization says that farmers basically must wash the salt out of the soil by repeatedly passing water (some reclaimed) through the soil. MORE INFORMATION IS NEEDED! (p. 108)

UNIT 6: “Paleolithic People: Tools, Tasks, and Fire,” This Unit begins with an examination of how hunting and fishing cultures’ development of technology and tools changed their environment, a deeper approach connecting environmental change to human activity. “Some scientists estimate that as many as 20% of all plant and animal species living today (Unfortunately, this material is not dated.) will be extinct by 2025. It is not clear how much the acceleration in the extinction rate is due to human practices, or to natural factors” (p.14)

OMISSION: The effects of human actions are much clearer now..Photosynthesis and decomposition would be impossible if the climate did not make it possible for them to occur, Life on earth without them, would end. Earth’s climate is one of the most important ecosystem services of all. The extinction of many animals, like the Mastodon, was partially caused by climate change, which melted glaciers ,made them more vulnerable to hunters, and disrupted their food supply. (p.182) Scientists have known about atmospheric warming since the 19th Century; the effect of carbon emissions on climate has been widespread since the 1970’s and known and suppressed for decades before then.Many other human causes of extinctions, from overfishing and hunting to uncontrolled grazing, to extermination of predators, to myriad sources of pollution are all common knowledge.

UNIT 6: California Connections: “**Gathering Resources from the Sea**” tells the horrific story of the exploding sardine and tuna industries, and how these fish faced extinction without Federal regulation.The gradual change to farming fish is part of the solution.(p.8) Teachers’ Background explains how adaptation to changes they could not control, such as climate change and new diseases, as well as control of fire and ice, led to the growth and spread of the human population. This coincided with mass extinctions of large animals throughout the world. The most important question is whether modern humans will survive changes they are making to the natural environment and CAN control.(p.12)

Suggestion: When students understand how Earth’s survival depends on changing human behavior **now**, they can engage in discussions which lead to research about why destructive practices such as the burning of fossil fuels, are allowed , and develop solutions which can be published, taken out of the schools into their communities through various media, using art, drama, music, environmental fairs, joining action groups to educate the public, political campaigns, etc.

UNIT 7: “Broken Jade and Tarnished Gold” Teachers Background : The short histories of the Aztec and Inca Empires are well-written and appreciative of their cultures, based on a succession of older cultures which had been developing for thousands of years. Both empires encompassed tall mountains with volcanoes, resulting in rich soil, easily-accessible minerals, a mild climate and biological diversity. There were deserts, humid rainforests, swamps and snowy mountains that produced permanent water supplies. From huge seashells, to hardwood, to tropical feathers, heavy wool, precious metals, and a variety of crops and animals for fur, wool, meat, and to carry heavy loads, they became wealthy.

Their societies were far better organized and advanced than those of the Europeans. (pp, 15-17) including unique farming methods, mathematical record-keeping and accounting systems, writing that had evolved from embroidered symbols (Inca) and symbols etched in stone (Aztecs.) They knew where to expand, and made laws to manage needed resources. Both cultures were warlike. Their religions included human sacrifices, which horrified other tribal peoples they encountered. (The Catholicism of the conquistadores with its Inquisition was equally violent) (pp.8-11)

Student booklets include material such as Creation myths, details of how their economies, communication systems they developed, and how natural resources were handled.

Lesson 5: “*Flame and Fever: Conquest and Disease*”: and **Lesson 6: “*Retribution and Providence: Effects of Disease*”** The Inca and Aztec empires’ collapsed when most of their citizens died of European Diseases (pp. 117, 125, 128, 129), exacerbated by the cultural collapse caused by the death of leaders believed to have been chosen by the gods. (p.130-131). The Spanish collected so much gold, Incas and spent it so foolishly, that its value quickly dropped across Europe.

Suggestion: With the Covid pandemic still going on, these 2 units would be a good starting place to learn about the pandemics of the 20th Century, the Flu of 1918, Mumps, Measles, Chicken Pox, Polio, Tuberculosis, Typhoid Fever, Scarlet Fever, and many others that have been controlled by vaccines. Students need to learn that plagues have always affected large numbers of all civilizations, that they’re normal, and how they can be controlled.

UNIT 7: *Sun Gods and Jaguar Kings* Teachers’ Background: Beautifully described and photographed, this Section shows the amazing diversity of the lands, climate, wildlife, and ecosystems between Northern Mexico and Northern Central America and emphasizes the effects of the environment on Urban Society, the development of agriculture, animal husbandry, and most aspects of culture. Urban Societies were fully developed 1000 years before the Spanish conquered most of the Inca land in 1535.. This is advanced, interesting Geography/ History. Environment lesson. (pp.12-13)

It favorably compares ancient Aztec and Mayan farming systems, and those of several California cultures: Piutes, Tulare, Chumash, Katsuvi, and Yokut,, which all developed farming methods that enabled permanent settlements, with temporary camps, and surplus that could be used for trade.

It also describes in great detail the incredible riches of the Meso-American lands where the Mayans, Aztecs, and Incas developed. It shows in many ways, the relationship between physical geography, renewable resources, and valuable items such as precious metals for trade. The tone is one of great admiration for the complex, class-stratified, hierarchical societies, with strong authoritarian governments. controlled by hereditary rulers and organized religion. Only these seem to meet the definition of “Civilization.”

Lesson 6: “*Development of Urban Societies*”: The beginnings of organized trade, based on surplus production, formalized religion, architecture,, Government,, and class-stratified societies. (The type of culture that is praised throughout Ten Strands as “Civilization”) A section on *Tenochtitlan: An Ancient Aztec Urban Society*, and *Machu Picchu: An Ancient Inca Urban Society* give students a vision of how advanced pre-industrial societies operated (p132-133) **V58**

Suggestion: This American admiration-throughout conventional history texts- for strong Empires that most of us would label “totalitarian dictatorships,” contrasts with the American freedom-loving. “This is a free country. No one can tell me what to do.” attitude, where we can carry loaded military machine guns without permits, and say whatever we want to whether it’s true or not. It would be interesting for students to consider their idea of the best Government.

OMISSIONS: People from most of these cultures are still here; and many still identify with them, and embrace the old ways, including their view of “Mother Earth,” and preserving their languages. Only a few years ago, Indigenous People Indigenous People got the United Nations to adopt the “Universal Declaration of the Rights of Mother Earth.” There are videos and books about modern indigenous people throughout Central and South America and Mexico.*These people are still being pushed to extinction by European and American governments and corporations. The whole Unit is a shame, completely unconnected to today’s reality, and the destruction of all those wondrous peoples and living things are being destroyed, tottering on the edge of extinction. THE TRUTH IS WHAT’S MISSING.

*Ramirez, Gloria, “The Fire & the Word: A History of the Zapatista Movement” ISBN:978087286488, 2008;

Davis,Wade, from “One River, “Mountains of the Elder Brother”: (Cogi of Colombia) ISBN:97800995592969 1996

Price, David,”Before the Bulldozer,: (Nambiquara of Brazil) ISBN 0-932020-67-4 1989

Angus Wright & Wendy Wolford, “To Inherit the Earth, “ (the Landless of Brazil) ISBN 0-935028-90-0 2003

Films: The Elder Bothers’ Warning (Cogi of Colombia (Global Warming) 1989 (You Tube)

Crude (Cofan of Colombia vs, Chevron Oil) 2009 Joe Berlinger www.crude the movie.com (You Tube)

UNIT 7: China: *Genius Across the Centuries*:Teachers’ Background: (This Unit is included because of the great detail in which the development of China as the technological foundation of modern world culture is shown, remembering that these are the inventions that have led us to the brink of NO FUTURE !)

Medieval China had a bureaucratic government that managed and controlled salt production, natural gas and heavy metal mining, steel, gunpowder and rocket manufacturing, and the shipping and weapons industries, throughout a huge and diverse land. Magnetism was discovered and compasses were mass-produced, as was tea, rice, silk,bamboo, and hemp: “China was the most extensive, populous, and technologically advanced region of the Medieval world.” (p.8) It had more than a thousand-year history of a bureaucratically administered government and economy: Bamboo was used to build boats, roofs, furniture, household items, tools, weapons, water and gas pipes. Both bamboo and hemp were used for clothing; and made the strongest rope. Hemp,which was easier to process, replaced bamboo for paper to make books, signs, wrapping, household and hygiene items. .the cheaper hemp led to block printing, movable type, and the mass production of books and documents. China became a meritocracy. As books became cheap, literacy became common. All men, (not women, who were still property) who could pass civil service exams,could become part of the government. Tea, which was used for medicinal purposes, and as a relaxing drink, took on great significance.Many strains were developed, and as it became a crop, grown for sale, rather than home use, it spread around the world, becoming an integral part of many cultures.The ability to generate very high heat, helped by the invention of bellows, and kilns, led to steel, and cast iron, which was melted and set in molds. The process of making steel by blowing air over molten iron was used in China since the 4th Century BCE.; (*more than 2000 years later, it drove the European and American Industrial Revolution. An American,William Kelly, learned it from Chinese steel-makers and it became known as the Bessemer Process,*) Stronger tools improved agriculture, while the wheelbarrow improved transportation. Natural gas carried by bamboo pipes was used for boiling brine to produce salt. China was a commercial and military giant.(pp.8-11, 128-129.)

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OMISSION: The only mention of the environmental effect of new technologies is:“forests disappeared, and coal replaced wood as the primary energy source.” The greater amount of carbon emissions from burning coal is not mentioned. (*Teachers’ Background*, p10).

:Lesson 2: “Going to the Source,” Charts the need for products, the resources that must be used to make them, and the influence of the new products on natural and social systems. Large Chinese armies went into battle armed with . . .flamethrowers, bombs, rockets, cannons, and rifles. Battles often took place. . . around cities and towns. These weapons caused terrible destruction of the land and living things.” p.77n

Omission: No reasons or causes for conflict, no details of the social and environmental results, nor effects on the future.

Lesson 3: “**Getting and Making Things.**” Government controlled access to materials from all over China & provided the infrastructure for the manufacture of many products.(p 82) ((There may be a question of whether learning the extremely detailed directions for making gunpowder (pp.76-77) (are an appropriate 7th grade activity.(pp.97,98))).

Lesson 4 :“**Natural Influences of Inventions,**” The **ethnocentric** referral:”the coal mines of Europe and the United States conjure up images of mountaintops blasted away and dumped into river valleys, clear-cut forests, and lunar-looking landscapes. . . . also apply to China.”(**So students just look at the U.S. and Europe in order to learn what was happening in China?**) “ Ores extracted for the ceramic, metallurgy, and gunpowder industries,placed similar pressure on the environment.” (No picture or details)

OMISSION: The last sentence avoids discussing actual damage to the environment:.”When one includes efforts to harness water power to turn wheels that drove blast furnace bellows, one can clearly imagine the influence these industries had on natural systems.”(p.101) “ Again, this is **inadequate.**

Lesson 5:“**Social Influences of Inventions**Government controlled access to materials & provided the infrastructure for the production of many products.(p 82)

This statement **minimizes environmental destruction:** “Though progress in agricultural techniques and practices substantially altered natural systems, some of the results from this effort included increased agricultural productivity, higher taxable income for the state.”(p.111) It sounds OK to alter Natural Systems.for Profit

Lesson 6: **The Influence of Chinese Genius on the World,** adds modern agriculture, umbrellas, multi-stage rockets, the belt drive, the chain drive, mechanical clocks, and oil-drilling techniques to the list of early Chinese inventions.(p.129) Students work in groups to analyze the need for modern inventions, organize them into timelines,and compare modern inventions around the world to the ancient Chinese inventions.and consider their effects today. pp.132-149)

UNIT 8: :Land, Politics, and Expansion in the Early Republic:Teachers’ Background The British and the U.S. signed the Treaty of Paris ending the American Revolution in 1783. The British had promised the Indigenous People who lived in the Ohio Valley that there would be no European settlement there. (This protected those who had been pushed off their eastern homelands by Europeans.Britain was not willing to spend huge amounts on their military to protect American settlements, which they did not benefit from.) Americans continued to settle on Indian lands protected by British treaty, building cabins, and planting fields which settlers believed gave them the right to own the land; other settlers had been granted land for U.S.military service. Land speculators bought as much land as they could to sell at a high profit later.This spread out settlement on the best land, rather than creating townships, which expanded commerce, and could easily be defended. Both President Washington and Jefferson disregarded the Indigenous peoples’ claim to land that had supported them for thousands of years;

believed hunting was wasteful, and worked with Congress for Federal control of all Indian lands. The U.S. expected payment for land that settlers claimed, and fought for and won control of Land that Britain had passed to various States. The Land Ordinance of 1787 regulated expansion and settlement until the Frontier closed in 1890. Conservation movements began working to stop the destruction of North America's wild habitat, when major damage to ecosystems became evident. (pp.8-11)

OMISSIONS: No recognition that the constant encroachment of European settlers into Indigenous land was because the free land promised to former indentured servants didn't exist. Wealthy businessmen & the U.S. Government owned it all. There is no mention of the urban poor, or immigrants..

“Land, Politics, and Expansion in the Early Republic,”: California Connections (pp.6-7) explains how 150 years of environmental destruction caused nonprofit organizations, such as the Nature Conservancy, state and federal agencies, local governments, private citizens and volunteers to begin working to restore and protect California's Natural Environment. The U.S. Bureau of Land Management, the Department of Fish and Game, and the Wildlife Conservation Board are involved in preserving Public Lands, and encouraging conservation with tax rebates and bonuses. They work with farmers and ranchers to compromise on the amount of land they use for crops to preserve wetlands

Lesson 6: “Land Ordinances Bring Change” The Public Land Survey System had some good effects, feeding the people, supporting public education, and banning slavery. It determined how more than a billion acres would be divided, sold, and turned into farms and ranches. This system also had many negative consequences: deforestation, loss of woodland habitats, and damming and channeling waterways caused massive erosion and pollution, changed ecosystems and destroyed riparian habitat. Construction of steamboats and their fuel used more wood, and accelerated the disappearance of wildlife, watershed, and forests. (p.113)

OMISSIONS: There were conflicts, displacement, and cultural genocide of American Indian cultures that have been long-lasting, and still affect indigenous groups.. These are mentioned, without detail, mention of continuous litigation, or any consideration of future restitution.

UNIT 8: “Agricultural and Industrial Development in the United States” (1877-1914); California Connections: TB California's agriculture was the most productive at the 1893 World's Fair, due to the mild climate and new irrigation methods. The “Agricultural Building” representing California was a model of a California Mission. By the 1890's Americans had become increasingly disconnected from the environment: “Industry and agriculture developed through the unregulated use of natural resources. (p10-11) Roads and train tracks made travel easier, but destroyed the natural environment, and, as the population grew and spread out, people interacted with each other differently. Mechanization of farm equipment increased production, and made farming a business. There were new quick methods of slaughtering animals, cutting meat, refrigerated railroad delivery to markets. This created a huge rise in the demand for meat and fresh fruit, which affected economic markets, daily life, and the natural world.” (p.12) Historian Frederick Turner's “Manifest Destiny.” became the dominant American philosophy and is still widely accepted today. (p.15 & Unit 5 Nature & Newcomers p 14. pp.14,15) The dream of American success was based on economic prosperity; free markets expanded the need for natural resources, and Nature was valued only for the ways it could be made into products. Destruction of the ecosystems that

supported U.S. civilization was considered progress. Unfortunately, these theories were considered factual and unquestionable, (p.13)

OMISSION: The ironic choice of the California Mission, a Spanish instrument of genocide, as an 1893 symbol of American agriculture, is not questioned, nor is the treatment of original Californians. 130 years later students should be taught to recognize the concept of “Manifest Destiny” in United States’ foreign policy, contemporary political speech, and actions. Ideas that once were acceptable are finally being questioned.

UNIT 8 Lesson 3 : “A Second Industrial Revolution” The Bessemer process for manufacturing steel, (invented in ancient China), the McCormick Reaper, and balloon frame construction (lightweight wood cut into uniform sizes for walls, windows, & doors,) simplified building houses. Barbed wire, which kept farm animals penned up, also protected farmers’ fields and used little wood. (pp.72,73)

UNIT 8* Lesson 4: *Technology Transforms Daily Life and Natural Systems* Where there were natural water systems, valuable minerals, excellent grazing land, railroads, industry and population grew. Indigenous people were pushed off their homelands, and where there were meat producing plants, the water systems became seriously polluted, a situation that lasted for decades. Each new invention required more lumber, more mining, more destruction.

A fictional journal :”A Day in the Life of Jonathan Sloth,” shows the problems and benefits of frontier growth. It’s well-written, easy for students to identify with, and mentions the displacement of the Illiwek people from their homeland: land:.. “It’s no fault of theirs we’ve got so many people movin’ in.” . . . “but they’re the ones that suffer for it.”(p.110), says Jonathon. (pp 96-97, 112-114)) **This could be used for a much deeper lesson**

UNIT 8 Lesson 5: *As the Century Turned: Considering Causes and Effects* The photographs in this Lesson and in the Lesson 4 are excellent ! (pp.125-135)

UNIT 8: *Industrialization, Urbanization, and the Conservation Movement.* TB Industrialization, urbanization, immigration, huge government investment, a tremendous work force, and great agricultural growth due to new technologies caused explosive growth between the Civil War and World War I. Student maps and diagrams illustrate them. People soon realized that all American natural resources could disappear if they were not protected, and growth was not carefully managed. The movement was divided between Preservationists, who believed the land should be untouched, and Conservationists who believed it should be managed and used. Books and articles spread both messages. Frederick L.Olmstead, designer of Central Park, opposed destruction of public land for private profit. Bison, deer, and other game animals were becoming extinct from over-hunting. Birds, whose feathers were used on hats, and fur-bearing animals were disappearing. From 25,000,000 bison, only 1000 remained by 1850. (pp8-11)

Suggestion: Americans accept the fact that a hunting or fishing license is legally required to kill wildlife. Vehicles also must be licensed Historically, there are thousands of regulations for the protection of society and nature.. (Guns are a strange exception.)The warming atmosphere has already caused billions of dollars in damages, destroyed towns that cannot recover, and their community networks,

forced thousands of newly jobless people out, caused devastating health problems, and interrupted education. Students should first consider how California passed the mandatory catalytic converter that prevents smog. Then brainstorm how Federal or Local governments can regulate fossil fuel emissions: e.g. raising fossil fuel taxes, and making "clean energy tax-free, rationing fossil fuels, forbidding new gas stations and gas burning infrastructure,, stopping new drilling, subsidizing clean energy transportation, including automobiles, busses, trucks, and light rails, These are already being done, How can we get the whole Country to squeeze out fossil fuels? .

Lesson 5: "America's Conservation Movement" :TB : In the 1800's, the Federal Government and State and local governments began protecting parks, As citizens began to support preserving nature, tourism, supported by transportation and hospitality industries, became big business. Wise use of land, ending deforestation and extinctions, elimination of waste, and profiteering were the foundation of the Conservation Movement, which was eventually accepted and enforced by the government. Today the (NOAA) National Oceanic and Atmospheric Administration studies the complex marine ecology of the ocean, genetics, as well as the effects of human population, pollution, toxics, and climate change, which must all be controlled in order to maintain sustainable fisheries(p.109) . The Conservation Conference (1908) advocated restoring damaged land. Preservationist John Muir, founder of the Sierra Club, wrote 300 articles and books about nature, and influenced Congress to make the Yosemite Valley a National Park. but Conservationist, President Theodore Roosevelt, started the U.S. Forest Service to manage and produce timber, beginning a split between conservationists and preservationists that continues today. Waterways needed protection, for fishing, and transportation; forests could not grow back if they were clear cut; animals would become extinct. States and Territories began to learn that the prosperity of America depended on protecting the land and its resources. President Theodore Roosevelt preached that destruction of nature would wrong their descendents.(pp. 108-109) Hundreds of environmental Organizations were formed in the 20th and 21st Centuries to protect various segments of our ecosystems, yet more and more species become endangered by habitat loss, pollution, and climate change, largely due to carbon emissions.

Suggestion: We must question why American governments are not leading an enormous movement to protect the earth from the disasters of a rapidly-heating atmosphere. Everything depends on protecting the lands, air, and waters, and the myriad of ecosystems interacting and thriving within them that make life possible on Earth, our only home. Americans have a history of legislating to support Nature. We need to honor that history, moving quickly to save the future .Visual Aids (pp 142-146)