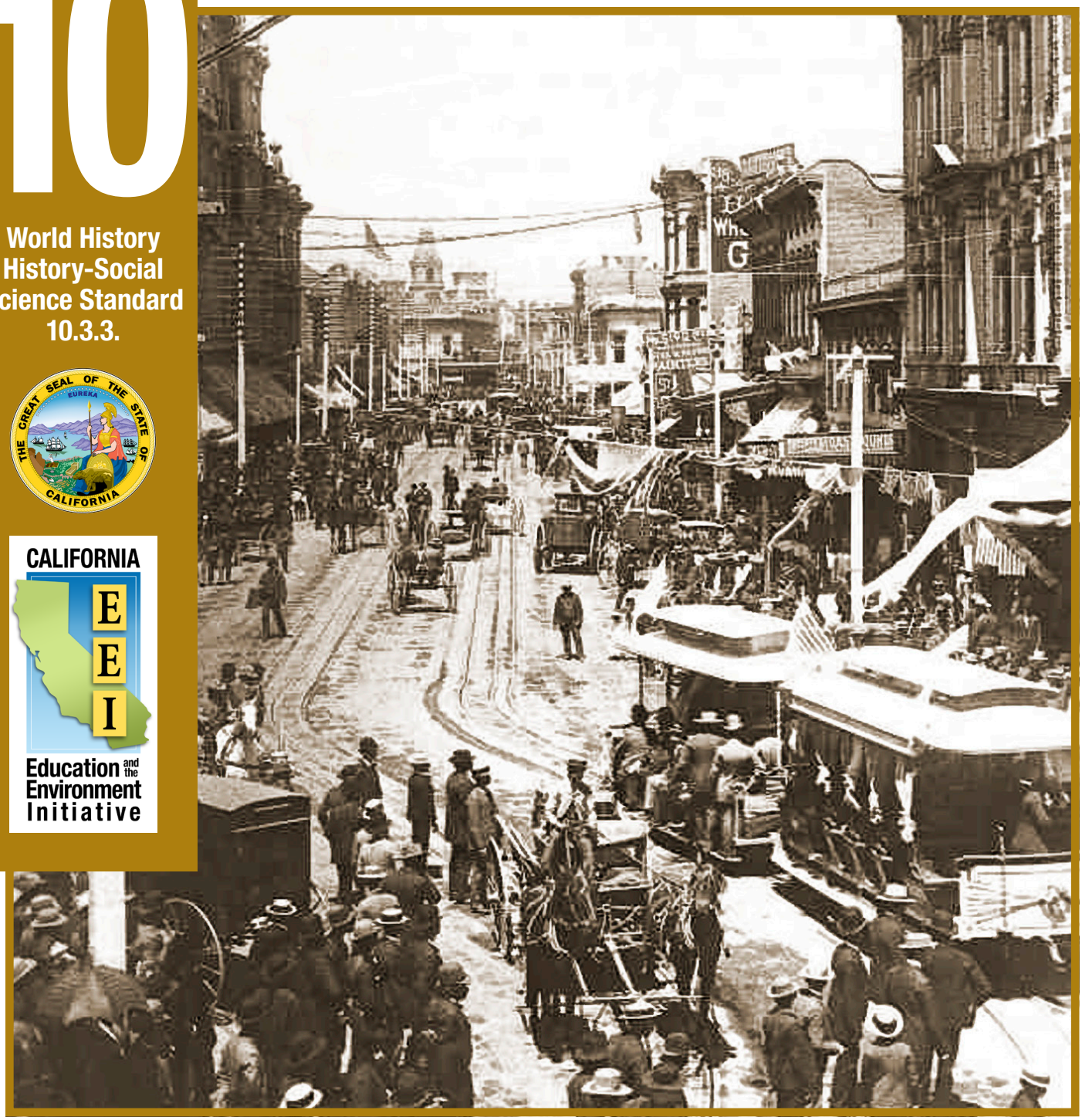
10

World History
History-Social
Science Standard
10.3.3.

Student Workbook

California Education and the Environment Initiative



Growth of Population, Cities, and Demands

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency

California Natural Resources Agency

Office of the Secretary of Education

California State Board of Education

California Department of Education

California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

Linda Adams, Secretary, California Environmental Protection Agency

Patty Zwarts, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency

Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency

Mark Leary, Executive Director, California Integrated Waste Management Board

Mindy Fox, Director, Office of Education and the Environment, California Integrated Waste Management Board

Key Partners:

Special thanks to **Heal the Bay,** sponsor of the EEI law, for their partnership and participation in reviewing portions of the EEI curriculum.

Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

Office of Education and the Environment
1001 I Street • Sacramento, California 95812 • (916) 341-6769
http://www.calepa.ca.gov/Education/EEI/

© Copyright 2010 by the State of California
All rights reserved.
This publication, or parts thereof, may not be used or reproduced without permission from the Office of Education and the Environment.

These materials may be reproduced by teachers for educational purposes.

Contents

Lesson 1 Los Angeles on the Move

Key Unit Vocabulary 2

Transportation and Natural Resources 4

Lesson 2 Birth of the Modern City

City Analysis 5

Group Presentation 6

Modern Cities Note-taking Chart 7

Lesson 3 How Modern Cities Influence Natural Systems

Urbanization and Natural Systems 8

Lesson 4 Laws and Policies to Manage Natural Resources

Chicago's Water Problem: Government Solutions 10

Lesson 5 Governments Respond to Managed Growth

Facts and Opinions 12

Acid rain: Rain with higher-than-normal acidity, usually caused by air pollution.

Act: A formal decision, law, or the like, by a legislature, ruler, court, or other authority.

Alkali: Any of various soluble mineral salts that can be made from ashes of plants and consisting largely of sodium carbonate or potassium.

Biofuel: An energy source derived from biomass, such as plants, or from metabolic byproducts, such as animal manure.

Canal: An artificial waterway for navigation and moving water from one place to another.

Coal: A fossil fuel consisting of carbonized vegetable matter.

Cost-benefit analysis: A method for weighing the pros and cons of a decision or action.

Dredge: The use of heavy equipment and machinery to remove sediments from one location and transport them to another.

Ecosystem: A specific area, such as a kelp forest, that contains a characteristic set of interdependent species that interact with each other and the abiotic components found there.

Factory: A building where workers use machines to manufacture material products (goods).

Heavy industry: Industries, such as coal mining and shipbuilding, that involve the use of large or heavy machinery or that produce large or heavy products.

Incentive: A policy, action, or reward that motivates or inspires a person or entity to take a certain action.

Industrial waste: A type of waste produced by industrial activity from factories, mills, and mines.

Industry: The businesses involved in providing a particular service or good.

Laws: Rules of conduct established and enforced by a government.

Legislation: The act of making or enacting laws, or the laws themselves.

Lock: A section of a waterway, such as a canal, closed off with gates, in which vessels in transit are raised or lowered by raising or lowering the water level of that section.

Manufacturing: Making products in large quantities, often using machinery or manual labor.

Migrate: To move from one location to another in order to live in the new place.

Mining: The act, process, or industry of extracting ores, coal, and other natural resources from mines.

Natural resources: Materials, such as water, minerals, energy, and soil, that people use from nature and natural systems.

Natural system: The interacting components, processes, and cycles within an environment, as well as the interactions among organisms and their environment.

Phosphates: Naturally occurring compounds including salts containing phosphorus.

Policy: A broad statement that describes how groups, organizations, and governments intend to implement or enforce their rules, regulations, and laws.

Population density: The number of individuals of a certain species per unit of land, such as the number of people per square mile or square kilometer.

Public health: Services and practices that are related to improving and protecting community health, especially sanitation, immunization, and preventative medicine.

Regulation: A specific rule created by a government agency or other legislative authority to implement and enforce laws and policies.

Rural: Related to the places outside of urban and suburban areas, and associated people and activities, such as agriculture.

Sanitation: The process of making something clean and healthy by, for example, disinfecting an area to protect health or removing waste products.

Soot: Fine black particles, usually composed of carbon, that are released during combustion.

Textiles: Cloth and manufactured fabrics.

Urbanization: The changing of rural and natural areas to densely populated urban areas as a result of large-scale migration to cities.

Viaduct: An elevated road or bridge for carrying a road or railroad over a valley.

Water crib: An offshore structure that collects water from close to the bottom of a lake to supply a pumping station onshore.

Watershed: The land area that drains water into a particular body of water, such as a stream, river, lake, or ocean.

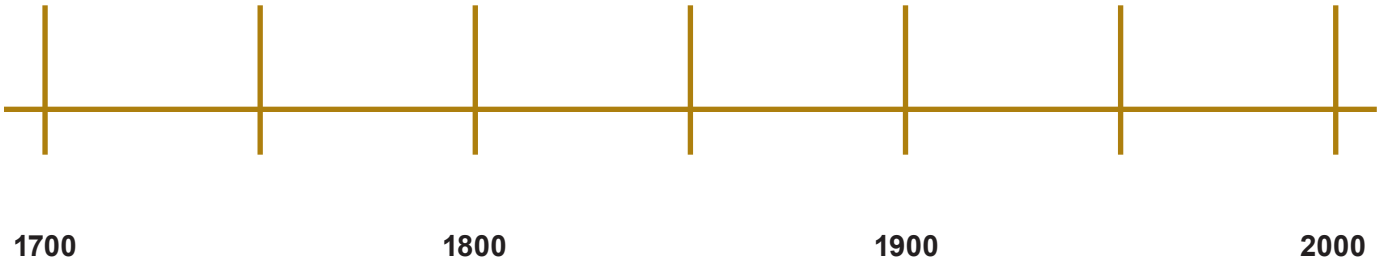
Name: _____

Los Angeles Transportation Timeline

Instructions: Use information from ***California Connections: Los Angeles on the Move*** (Student Edition, pages 2-5) to make an illustrated timeline below. (25 points maximum)

Write the names or draw icons of forms of transportation in the correct centuries **above** the timeline. Write the names or draw icons of forms of energy sources and/or effects on natural systems **below** the timeline. Your timeline should include:

- Population data (1 point)
- Two forms of transportation in each century (3 points)
- One natural resource used during each century, or one natural system affected by the transportation in each century. (3 points)



Instructions: Answer the following question in the space provided. (5 points)

How did the urbanization of the population in Los Angeles influence natural resources and systems?

_____

_____

_____

_____

_____

_____

_____

_____

Name: _____

Instructions: After reading and discussing the **Information Sheet** about your assigned city, write responses to the following questions. Be specific in your answers and use as many details as possible.

1. What is the name and location of your assigned city? (1 point)

_____

_____

2. What industries developed in your city? How did industry change the city? (5 points)

_____

_____

_____

_____

_____

_____

_____

_____

_____

3. What natural resources were used to support industrialization? How were these natural resources used? (5 points)

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name: _____

Name of City:

Location of City:

Industry or Industries:

Population:

Natural Resources:

Relationship Between the Industrial Revolution and Population Growth:

Modern Cities Note-taking Chart

Lesson 2

Name: _____

Instructions: Use the chart below to take notes about the other three cities during student presentations.

Name and Location of City	Name and Location of City	Name and Location of City
Industry, Population, and Natural Resources Information		
Relationship Between the Industrial Revolution and Population Growth		

Name: _____

Instructions: Complete the following chart by answering questions 1–4. You will use this information to write a paragraph on the next page. (5 points each)

1. How did areas around cities and towns change as a result of industrialization? Give specific examples.	_____ _____ _____ _____ _____
2. What were the benefits gained by these new industrialized cities? Give specific examples.	_____ _____ _____ _____ _____ _____ _____
3. What were the challenges faced by these new industrialized cities? Give specific examples.	_____ _____ _____ _____ _____ _____ _____

Name: _____

4. How did industrialization and the population growth in urban areas affect the natural systems in and near these cities? Give specific examples.	_____ _____ _____ _____ _____ _____ _____ _____ _____

Instructions: Complete the task below.

5. Write one paragraph that describes how the urbanization of the population that resulted from the Industrial Revolution influenced natural systems within and surrounding cities. (5 points)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Name: _____

The Industrial Revolution required the use of many natural resources and resulted in resource management issues that required the creation of laws, policies, and incentives to manage future resource use. In Chicago, water pollution increased as a result of the Industrial Revolution.

Instructions: Use information from this lesson to answer the following questions. (2 points each)

1. What was the main source of Chicago's drinking water?

_____

2. What were three causes of water pollution in Chicago that resulted from the Industrial Revolution?

_____

_____

_____

3. Why was Lake Michigan becoming more polluted?

_____

_____

_____

Instructions: Laws and policies associated with natural resource use and management were implemented in Chicago to address water pollution problems. Describe how each of the following government actions was established to improve the management and quality of Chicago's water supply. (5 points each)

4. Construction of the Chicago Crib in Lake Michigan, 1865:

_____

_____

_____

_____

_____

_____

_____

Name: _____

5. Passage of the Sanitary District Enabling Act, 1889:

6. Reversal of the Chicago River, 1889:

7. Construction of the Chicago Sanitary and Ship Canal, 1900:

Name: _____

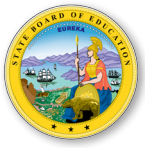
Instructions: Complete the following chart using information from the lesson and group discussions. (10 points)

Facts About the Rhine River	Opinions About the Rhine River

Name: _____

Instructions: Write a response to the following question in the space below. (10 points)

As industrialization increases and populations continue to grow in places around the world, what should be the roles of governments and individuals in managing and protecting natural resources?



California STATE BOARD OF EDUCATION

California Education and the Environment Initiative

Printed on post-consumer recycled paper