



SAFE ROUTES TO SCHOOLS
CURRICULUM



GREEN GUIDE UNITS/ LESSON DESCRIPTIONS

3-6 th GRADE: TRANSPORTATION LOCATION

Three lessons, history/science.

Using Latitude and Longitude coordinates is a fundamental skill students need when navigating maps. These activities combine mapping skills with historical information about transportation. They can be used separately or in conjunction with each other.

GEOGRAPHIC HISTORY OF THE BICYCLE (3-5) engages students as they find locations on their own globe. Guided by a PowerPoint presentation, the basics of Longitude and Latitude are explained before students answer historical bicycle trivia by finding coordinates.

BERMUDA TRIANGULATION (4-6) delves deeper into plotting coordinates and applies scientific data sets and reasoning to the problem "Is the Bermuda Triangle Real?" Next students use this information to compare and contrast claims about historical and current modes of transportation.

GEO-CACHING FIELD TRIP (3-6) uses GPS satellites to hone in on specific, local longitude and latitude coordinates while participating in the high-tech treasure hunt called Geo-Caching! This trip can be combined with our walking or cycling field trip.

CA EDUCATION STANDARDS:

4th Grade History-Social Science Standards

4.1 Students demonstrate an understanding of the physical and human geographic features that define places and regions in California.

1. Explain and use the coordinate grid system of latitude and longitude to determine the absolute locations of places in California and on Earth.
2. Distinguish between the North and South Poles; the equator and the prime meridian; the tropics; and the hemispheres, using coordinates to plot locations.

4th Grade Science Standards

- 6a.** Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.
- 6f.** Follow a set of written instructions for a scientific investigation.

6 th GRADE: 3-D MAPS

One lesson, science.

After an introduction to reading topographic maps, two fun activities allow students to practice using their topographic map skills. First students follow topographic lines to cut foam layers that stack to construct a 3-D elevation map depicting their region of Marin. Next, each student uses the Marin County Bike Map and 3-D map to find their optimum route from their home (or drop-off location) to the school.

CA Standards: 6th Grade Science

- 7f.** Read a topographic map and a geologic map for evidence provided on the maps and construct and interpret a simple scale map.
- 7d.** Communicate the steps and results from an investigation in an oral presentation, with their route data as a visual aide.

6-8 th GRADE: POLLUTION AND EVOLUTION

One lesson, science.

When the city of Manchester in the United Kingdom industrialized in the 1800's heavy air pollution from coal covered the landscape with a dark sooty film. In less than 100 years, the local white and black "peppered" moth population evolved into 98% dark gray or black.

A hands-on "natural selection" moth activity and scientific demonstration of atmospheric gases guides students to the realization that the humans are capable of altering our environment with pollution and that a changing environment leads to the successes and failures of species, possibly ours.

CA STANDARDS: 7TH GRADE SCIENCE

- 3a.** Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms.
- 3b.** Students know the reasoning used by Charles Darwin in reaching his conclusion that natural selection is the mechanism of evolution.
- 3e.** Students know that extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient for its survival.

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6-12 th GRADE: MARKETING STRATEGIES & TRANSPORTATION

Two lessons, health/art.

Instead of using sensible persuasion, modern marketing appeals directly to our emotion. The historical use of emotional marketing to promote cigarette smoking amongst women is examined. Using car commercials, students identify the intended audiences and the type of emotional appeals. The first lesson ends with the assignment of making their own “Green Transportation” ads using emotionally based marketing strategies.

The second lesson allows students to present an ad they have made to promote walking, biking, carpooling, busing, or any other environmentally friendly transportation. Students create a list of ways they can promote and partake in green transportation in their community.

CA STANDARDS:

6th Grade Health:

2.2.a Analyze the influence of marketing and advertising techniques, including the use of role models and how they affect use of alcohol, tobacco, and other drugs.

8th Grade Visual Arts

2.3 Create an original work of art, using film, photography, computer graphics, or video.

6-12 th GRADE: THE COST OF TRANSPORTATION

One lesson, science.

This lesson focuses on the variety of transportation methods available and the costs and consequences associated with each mode of travel. Both upfront and “hidden” costs are experienced first-hand through an activity using fake money.

The lesson concludes with a discussion aiming to inspire and empower students to take action by exploring what stands in the way for them to use more sustainable transportation choices in their community.

6-12 th GRADE: WHAT DO I STAND FOR?

One lesson.

“What do I Stand For?” is an activity that invites students to explore their beliefs, values, and their willingness to take action in response to environmental problems, particularly by using green transportation.

The purpose of the activity is to create a safe environment for students to honestly and critically explore their values with each other vis-à-vis ecological problems and green transportation. Students actively hear the perspectives of others and take a proactive stand for their beliefs while being open-minded toward the beliefs of others.

6-12 th GRADE: TRAVEL JOURNAL

Three lessons.

The Travel Journal challenges students to explore their travel modes and discover how many trips they can reduce by choosing alternatives. They will be asked to keep a journal for two weeks of their travel choices, using the second week to find new ways to travel.

They will also discover how their parents got around when they were young. It is an excellent way to prepare students to promote green ways to school to their peers but taking the first step themselves.

This curriculum was created by James Sievert, Shumit DasGupta and Gwen Froh, and edited by Wendi Kallins and Connie Breeze.

Safe Routes to Schools is a program of the Transportation Authority of Marin.

9-12 th GRADE: HISTORY OF TRANSPORTATION

Two lessons, social science/English.

This lesson offers students a general overview of the evolution of transportation in Marin and California from the early days to modern times. Students are given an opportunity to look critically at current transportation systems and the interdependent relationship of transportation with modern cultural norms and values. By looking back through the history of transportation we can understand how the choices we make today will affect our lives and our planet tomorrow. This class encourages students to take action that reflects personal commitment to balance their own mobility needs with the requirements of personal, social and environmental health.

STANDARDS ADDRESSED:

Chronological and Spatial Thinking

Students compare the present with the past, evaluating the consequences of past events and decisions and determining the lessons that were learned.

Students relate current events to the physical and human characteristics of places and regions.

Historical Interpretation

Students show the connections, causal and otherwise, between particular historical events and larger social, economic, and political trends and developments.

Students analyze human modifications of landscapes and examine the resulting environmental policy issues.

TEENS GO GREEN

