

Earth Day Special Educator Guide

A resource for using QUEST video in the classroom

Watch it online <http://www.kqed.org/quest/television/view/227> | 28:16 minutes

QUEST SUBJECTS

Life Science
Biology
Health
Environment

Earth Science
Geology
Weather
Astronomy

Physical Science
Physics
Chemistry
Engineering

CA SCIENCE STANDARDS

Grade 6 Ecology

5. Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. (e)

Resources

6. Sources of energy and materials differ in amounts, distribution, usefulness and the time required for their formation. (b)

Grades 9-12

Ecology

6. Stability in an ecosystem is a balance between competing effects. (a,b)

Earth Science

9. The geology of California underlies the state's wealth of natural resources as well as natural hazards. (a)

Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. (l,m)

PROGRAM NOTES

The Bay Area has long embraced a vigorous environmental movement. Take an in-depth look at its beginnings and past successes, from cleaning up smog to protecting open space. You'll also find out about the most urgent ecological threats the Bay Area will face in the decades ahead.



In this segment you'll find out...

- ⦿ how the amazing accomplishments of a few Bay Area activists have shaped how we live, work, learn and play in a more environmentally responsible way.
- ⦿ how young California students are becoming the next generation of environmental stewards.
- ⦿ what new challenges are being faced today by the environment and the people who protect it.

TOPIC BACKGROUND

Imagine being at the first Earth Day celebration on April 20, 1970. Its founder, Senator Gaylord Nelson, developed the idea over a seven-year period after he realized that political leaders were not making environmental issues a priority. Senator Nelson began a massive grassroots effort among his colleagues and in local communities. Twenty million people participated on that first Earth Day. They became part of a change that continues today.

In the Bay Area, Earth Day served to enhance the environmental activism already present at that time. Many people had begun grassroots efforts that were making significant impacts in their own communities. Air, water, garbage and open space were just some of the challenging environmental issues that were not being addressed. In the 1960s there were no recycling programs or Clean Air Act, sewage was freely dumped into waterways, toxic emissions went unregulated, little open space was being preserved and the Bay's wetlands were disappearing rapidly.

Today, things are very different, thanks to the work begun about 40 years ago by a few key people. However, there are countless stories of people working within the communities around the Bay Area for long-lasting environmental change. Because of the work that was done in the 1960s and 1970s, young people today can learn how to help protect and preserve our resources. As they conduct environmental health research within their communities, plant native species and restore habitats, students from around the Bay are growing up to be the next generation of environmental stewards.

The Bay Area has come a long way since that first Earth Day. Still, there are new challenges to face. Issues like global warming, transportation and an increasing population require innovative solutions. But because of the rich tradition of environmental activism present in this area, the challenges will be met with creativity, dedication and effective grassroots community organization.

Media Enhance Education

Video and audio can be powerful tools for meaningful learning. It all depends on you, the educator. The key to using media effectively is preparation. Make the most of learning opportunities by encouraging students to become active viewers and listeners. Pick and choose from the suggested questions and activities to offer an engaging media experience.

Questioning

Oftentimes, teachers and students become frustrated during a media segment when students can't find the answers to a long list of questions. Provide a limited number of questions or topics for students. This focuses their attention during a media segment, helps to keep them engaged and generally results in higher quality answers. QUEST Ed. has provided a number of options for focus questions ranging from fact based to opinions, as well as "big picture" ideas.

PRE-VIEWING

- What does Earth Day mean to you?
- What do you think is the purpose of Earth Day?
- List two to four things in your community that might cause environmental pollution.
- Describe recycling. List all the recyclables in your home or school.
- Look at a map of California and identify specific features, including water and open space. Find areas that might be susceptible to pollution and discuss why.
- Conduct Internet research on people who greatly impacted the environmental movement. Before viewing the segment, ask students to talk about the people who contributed to the movement and what they did.

VIEWING FOCUS

NOTE: You may choose to watch the television segment twice with your students: once to elicit emotional responses and get an overview of the topic and again to focus on facts and draw out opinions.

- Record any facts you find interesting while you watch.
- Choose one group highlighted in this segment and describe what they did to help take care of the Bay Area.
- Explain the start of Save the Bay, the Ecology Center or the Golden Gate National Recreation Area.
- Describe what the students from Excel High School in West Oakland realized about their community. What do you think they should do to get involved in this issue?
- List two to four reasons why it takes such a long time to change things that affect our environment.
- Explain how open space contributes to the health of local ecosystems and economies.
- Describe how today's California students are becoming part of the environmental movement.

POST-VIEWING [Links to activities mentioned here can be found on the following page.](#)

- **Review** students' answers to the Viewing Focus Questions.
- **Explore** biographies of famous environmental activists. Describe how they contributed to the environmental movement or to our region's environmental health.
- **Debate** current environmental issues like global warming, population growth and environmental health and justice. Have students discuss the pros, cons and stakeholders on both sides of each issue.
- **Design** a recycling program at your school. Educate your school's population about recycling and especially about products that can't be recycled. Call your local waste management company and ask for free recycling bins for each teacher's classroom.
- **Create** a plan for how the next generation can contribute to the environmental health of its communities. Put that plan into action by forming a think tank at your school to discuss these issues.

“Let us stand together to make our world a sustainable source for our future as humanity on this planet.” – Nelson Mandela

LESSON PLANS / ACTIVITIES

Integrated Environmental Health Middle School Project (IEHMSP)

<http://www.iehms.com/online/>

- Students can engage in a community-based research project that spans all disciplines. This Web site provides curricula to effectively explore the scientific and societal issues surrounding environmental health.

Terrain for Schools The Ecology Center Web site

<http://www.ecologycenter.org/tfs>

- Features curricula and lesson plans for current-events-based instruction and offers California State Education Standards curricula for high school teachers.

Scorecard The Pollution Information Web site

<http://www.scorecard.org/>

- Get an in-depth survey of your zip code and create an eye-opening report of all the polluters in your area. This Web site covers air, water, certain chemicals, toxic polluters and much more.

EDUCATOR WORKSHOPS

Bay Area Environmental Education Resource Guide The Ecology Center Web site

<http://www.ecologycenter.org/baeerg/>

- An A to Z list of local Bay Area environmental education workshops and professional development with addresses, Web sites, programs and resources offered, topics covered and cost (many are free).

California Regional Environmental Education Community CREEC Network Web site

<http://www.creec.org/>

- An invaluable resource directory for environmental education, this Web site is filled with environmental education providers, calendars of ongoing activities, opportunities for funding and teacher professional development.

Bay Area Wilderness Training (BAWT)

<http://www.bawt.org/>

- BAWT provides hands-on training to effectively lead youth into the wilderness, as well as an array of free equipment resources to prepare and outfit students. Taking life-changing wilderness excursions can change attitudes and help protect the environment.

ARTICLES / READING

Regional Oral History Office The Bancroft Library and the UC Berkeley Library

http://bancroft.berkeley.edu/ROHO/collections/av_online.html

- Enjoy video and audio interviews and documentaries about two California environmentalists.

Save the Bay

www.savesfbay.org






- Click on the “History” tab under “About Us” to learn how the first big Bay Area grassroots environmental projects got started.

Look for the



indicating resources from QUEST partner organizations

QUEST QUAD

FIELD NOTES 	FIELD TRIP 
<p>Go outside and ...</p> <ul style="list-style-type: none"> ⊗ Observe your neighborhood <ul style="list-style-type: none"> • Look for evidence of environmental pollution in your neighborhood. Create a way to collect and track your data. ⊗ Investigate the area around your school <ul style="list-style-type: none"> • Conduct a walking tour around your school. Walk with a map and highlight any potential hazards. Document evidence of environmental pollution. ⊗ Monitor your local creek  <ul style="list-style-type: none"> • Try the Girl Scouts' water testing activity. http://www.girlscoutsbayarea.org/pages/initiatives/qsstb/to_do/disc_watershed.html 	<p>Visit ...</p> <ul style="list-style-type: none"> ⊗ Ecology Center <ul style="list-style-type: none"> 2530 San Pablo Avenue, Berkeley, CA 94702 http://www.ecologycenter.org • Use the library as a resource for school projects or community information. • Volunteer for projects all around the Bay Area. • Shop at the Ecology Center store. • Participate in ongoing local events. ⊗ Golden Gate National Recreation Area <ul style="list-style-type: none"> • Explore and volunteer in the Park http://www.parksconservancy.org/help/groups.asp
FIELD RESEARCH 	FIELD TEST 
<p>Find out more about...</p> <ul style="list-style-type: none"> ⊗ The history of the environmental movement <ul style="list-style-type: none"> • Visit the American Metrological Society Web site to learn about important environmental events from the mid- to late-20th century. http://www.ametsoc.org/sloan/cleanair/cleanairenevev.html ⊗ The Bay Area's air quality and how it has changed <ul style="list-style-type: none"> • Look at the Bay Area Air Quality Management District's Web site for a pictorial history of air quality over the last 50 years. http://www.baaqmd.gov/50th/index.html 	<p>Experiment with...</p> <ul style="list-style-type: none"> ⊗ Building a community or school garden <ul style="list-style-type: none"> • Ask your principal or local community center if you can organize a group to build a garden. • Use Internet resources, such as the California School Garden Network http://www.csgn.org , to help you begin your project. ⊗ Constructing your own recycling center <ul style="list-style-type: none"> • Find a way to make recycling at home easier. • Make signs for what can and can't be recycled. • Organize a recycling area in your home with properly labeled bins.

VISIT OUR PARTNERS

The Bay Institute

www.bay.org

California Academy of Sciences

www.calacademy.org

Chabot Space and Science Center

www.chabotspace.org

East Bay Regional Park District

www.ebparks.org

Exploratorium

www.exploratorium.edu

Girl Scouts of Northern California

www.girlscoutsnorcal.org

Golden Gate National Parks Conservancy

www.parksconservancy.org

The J. David Gladstone Institutes

www.gladstone.ucsf.edu

Lawrence Berkeley National Laboratory

www.lbl.gov

Lawrence Hall of Science

www.lawrencehallofscience.org

Monterey Bay Aquarium

www.mbayaq.org

Monterey Bay Aquarium Research Institute

www.mbari.org

Oakland Zoo

www.oaklandzoo.org

The Tech Museum of Innovation

www.thetech.org

UC Berkeley Natural History Museums

<http://bnhm.berkeley.edu/>

U.S. Geological Survey

www.usgs.gov

MORE EDUCATIONAL RESOURCES FOR USING QUEST MULTIMEDIA TO ENHANCE 21ST CENTURY SKILLS IN TEACHING AND LEARNING

Why Use Multimedia in Science Education?

<http://www.kqed.org/quest/downloads/QUESTWhyMedia.pdf>

- Read about the importance of using multimedia in the 21st century science classroom.

How to Use Science Media for Teaching and Learning

<http://www.kqed.org/quest/downloads/QUESTMediaTips.pdf>

- A collection of tips, activities and handouts to actively engage students with multimedia.

Science Multimedia Analysis

<http://www.kqed.org/quest/downloads/QUESTMediaAnalysis.pdf>

- Give your students the tools to recognize the purposes and messages of science multimedia.

Create Online Science Hikes with Google Maps

http://www.kqed.org/quest/files/download/52/QUEST_ExplorationCreation.pdf

- Do you like the science hike Explorations on the QUEST site? Use this place-based educational guide to create similar science-based maps with youth.

OTHER WAYS TO PARTICIPATE IN QUEST



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www.kqed.org/quest



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89.3 FM Sacramento
Mondays at 6:30am and 8:30am**



WATCH

**KQED Channel 9
Tuesdays at 7:30pm**