art IS education

Creating Solutions for the World We Share

march 2011 student performances and exhibitions of arts learning

Art IS Education 2011 Sustainability Education Guide

Student Artwork: Details of mural created by students in the Alameda County Arts Commission's Creative Power Program at the Alameda County Juvenile Justice Center

Student Artists: 30 girls and boys aged 13 – 18

Teaching Artist: Lilli Lanier

Photos: Sibila Savage

Alameda County Office of Education
Sheila Jordan, Superintendent

ALAMEDA COUNTY ARTS COMMISSION

Alameda County SUSTAINABILITY
Local Action, Global Impact.

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AC TRANSIT

Art IS Education 2011
Sustainability Education Guide

Alameda County Sustainability and You

Alameda County Sustainability is helping Alameda County take steps to go green, with a variety of policies and practices to encourage environmentally friendly choices for local businesses and residents. These efforts include education and programs for County employees to support their efforts to conserve our natural resources in the daily choices they make in the course of providing services to the public.

The theme for Art IS Education 2011 is "Creating Solutions for the World We Share." The Alameda County Arts Commission, in partnership with Alameda County Sustainability, Alameda County Probation Department, and the Alameda County Office of Education, has created this guide to assist you in exploring the theme from a sustainable and environmental perspective.

This guide includes:

- Part 1: Examples of Student Artwork (Pages 3-6)
    - Inspiring examples of student artwork from the Juvenile Justice Center and the Service Learning Waste Reduction Project
- Part 2: The Green Map: Arts + Sustainability Project Plan (Pages 7-15)
    - A suggested arts and sustainability project plan that can be flexibly used in different contexts with a range of age groups and arts disciplines
- Part 3: Online Resources (Pages 16-19)
    - A wide range of resources easily accessible on the web including:
        - Art Supplies
        - Environmental Art and Videos for Inspiration
        - Curricular Resources
        - Greening Your School's Operations and Curriculum
        - Greening Your Home

Alameda County Sustainability and the Alameda County Arts Commission look forward to hearing about the creative ways local educators, teaching artists and community members use these resources to integrate art and sustainability as part of Art IS Education 2011!

- For more information about Alameda County Sustainability, visit www.acsustain.org.
- For more information about Art IS Education, visit www.artiseducation.org.
- For more information about this guide or to share how you've used it, contact Violet Juno at the Alameda County Arts Commission at violetjuno@gmail.com.

Part 1: Examples of Student Work

Students across Alameda County are exploring sustainability issues through art making. Here, two programs are highlighted as examples.

Creative Power

Support Recycling Painting by JJC youth. Photo: Sibila Savage.

Youth participating in Creative Power, the Alameda County Art Commission's arts education program at the Juvenile Justice Center in San Leandro have spent the last year exploring the theme "Creating Solutions for the World We Share." Here are three different projects they completed.

1) Working with Teaching Artist Marion Coleman, a group of 30 boys aged 14-18 made quilts about our planet earth. First, youth learned about environmental issues affecting the local and global community. Then the teens created artistic interpretations of a healthy planet using textiles and found materials. The teens worked individually, in pairs or in small groups to design the message and the composition of each quilt. Each quilt was then sewn together by each of the participants on sewing machines. The result is a strong visual reminder of the beauty of our planet and the need to take care of it while demonstrating the power of youth voice and collaboration. This project drew on Energy Quest online resources developed by the California Energy Commission. For more information please visit www.energyquest.ca.gov/saving_energy/RECYCLINGFactsGame.pdf.

Earth Quilt by JJC youth. Photo: Sibila Savage.

2) Working with Teaching Artist Hershell West, 32 students aged 13-17 learned about the value of recycling, reusing and reducing our use of natural resources. Based on the topic, each student developed a verbal message. After a discussion about the relationship between word and image, each student sketched a composition using color and design to communicate their statement. After a drawing was finalized, students created acrylic paintings on canvas.

3) Thirty girls and boys aged 13-17 working with Teaching Artist Lilli Lanier reflected on the Art IS Education theme "Creating Solutions for the World We Share" and chose to focus on themes

of hope and transformation. They chose visual symbols to show the transition from despair to hope, from dark to light, from loss to life, from loneliness to community, from misunderstanding to wisdom. Nearly all the symbolic images they selected to express their ideas were of the natural world. Although the 10 foot long mural did not begin as an environmental project, the students explored the theme of self-transformation through the images familiar to them from the natural world. This resulted in a rich visual tapestry surfacing the interdependent relationship between people and their planet.

Details of the *Creating Solutions Mural: Transformation* by JJC youth. Photo: Sibila Savage.

One student reflected, “When I saw the finished project, I felt proud because we did it as a group. I found out I really like working with my hands.” Another student said, “I learned that in art, you can be yourself and not worry about everything being perfect. This project helped me feel less sad and think about things outside of juvenile hall.”

The Service Learning Waste Reduction Project

Another program that encourages students to express solutions to environmental problems through the arts is the collaboration between StopWaste.Org and the Alameda County Office of Education's Service Learning Program. Service-learning is a method of learning that creates opportunities for participants to learn through active participation in thoughtfully organized projects that combine community service with academic studies in order to foster civic responsibility. StopWaste.Org is the public face of both the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board.

Given that schools in Alameda County generate over 60,000 tons of landfill waste every year representing 4% of all waste sent to landfill in the county, StopWaste.Org and the Alameda County Office of Education Service Learning Program forged a partnership. Together they are dedicated to helping students, teachers, and schools apply the 4Rs (Reduce, Reuse, Recycle, Rot) to develop key academic skills and concepts while improving environmental sustainability.

Garden artwork by students from Leadership Public School.

Through this program, more than a dozen schools across Alameda County have created arts projects that highlight waste reduction themes. A wide range of arts disciplines have been employed including theatre and circus arts, music and songwriting, digital art and animation, and both two-dimensional and three-dimensional visual arts. Using the service-learning model, all projects include ways for the project to be shared with the school or local community or directly impact the needs of the community.

Theatrical performance by Irvington High students.

Here are three examples:

1) Irvington High School students in Fremont worked with the Circus Center to create an original musical about saving the planet that they toured to nearby elementary schools to raise awareness of sustainability issues. A high school student reflecting on the experience noted learning stage skills and waste reduction skills went hand in hand. "I never really thought about how important the circus arts are to my acting. I really learned to project my voice and facial features. I also took the waste reduction message home and said, 'Hey, Mom, don't we have one of those little green bins for food scraps? Why don't we use it?' So my parents started using the green bin."

2) Students at Leadership Public School on Castlemont Campus in Oakland used landscape design and public art to create an urban farm to help promote peace and address the challenge of urban food deserts. The garden provides the school community with an outdoor science lab, bountiful harvests and a boost to student enthusiasm for learning and community involvement.

3) Wood Middle School in Alameda created a trash to treasure museum open to the public using recycled materials to trace innovation in historical cultures from Early Man to the Italian Renaissance. The museum served as an eye-opening display of the creative ways trash can be reused while educating the community about the high points of creative thinking throughout history. Each artwork included signage about the historical significance of the object and the materials used to make it. For instance, this bust of Nefertiti was made from recycled soup cups, a Starbucks coffee cup, and a Styrofoam egg carton.

Nefertiti sculpture by student from Wood Middle School.

For more information:

- More information and photo documentation on these projects, as well as many other service-learning projects using the arts, is available at: http://schools.stopwaste.org/index.php?option=com_content&view=category&layout=blog&id=137&Itemid=201

- Visit http://schools.stopwaste.org/ for resources to help students reduce waste and promote sustainability. Resources include free 4Rs teacher kits, assemblies, field trips, teacher training, and a resource library.

Submit Your Art

Have your students created artwork with sustainability themes? In honor of Art IS Education 2011, Alameda County Sustainability in partnership with the Alameda County Arts Commission plans to feature youth artwork and sample lesson plans on their web site. If you would like to submit your youth art on ecological themes for consideration, please submit a project description, photos of your project and student artist statements to Violet Juno, Alameda County Arts Commission's Art IS Education Featured Event Coordinator, at violetjuno@gmail.com.

Part 2: The Green Map: Arts + Sustainability Project Plan

Would you like to explore sustainability issues through artwork with your students or children? Try this project as a way for youth to investigate their school, home, or building, find out what "green" features it has in place, dream up new ways they can contribute to a "green" world and create an artwork about what they have learned. This is a flexible project rather than a prescriptive lesson plan. You are encouraged to customize it to your context and your goals for the youth you are working with.

Project Goals

- Increase awareness and understanding of environmental issues and climate change behaviors.
- Support positive decision-making.
- Develop art skills as a means to express ideas and feelings.
- Increase self-awareness and self-expression through words and images.

California Science Content Standards

This project plan can help support student understanding of grade level Science Content Standards for Life and Earth Sciences such as:

- **Kindergarten:** Standard 3c. Students know how to identify resources from Earth that are used in everyday life and understand that many resources can be conserved.
- **Grade 1:** Standard 2b. Students know both plants and animals need water, animals need food, and plants need light.
- **Grade 2:** Standard 3e. Students know rock, water, plants, and soil provide many resources, including food, fuel, and building materials, that humans use.
- **Grade 3:** Standard 3c. Students know living things cause changes in the environment in which they live:
- **Grade 4:** Standard 3. Living organisms depend on one another and on their environment for survival.
- **Grade 5:** Standard 3d. Students know that the amount of fresh water is limited and that its availability can be extended by recycling and decreasing the use of water.
- **Grade 6:** Standard 6b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.
- **Grade 9-12:**
    - Standard 4d. Students know the differing greenhouse conditions on Earth, Mars, and Venus; the origins of those conditions; and the climatic consequences of each. Standard 8b. Students know how the composition of Earth's atmosphere has evolved over geologic time and know the effect of outgassing, the variations of carbon dioxide concentration, and the origin of atmospheric oxygen.
    - Standard 8c. Students know the location of the ozone layer in the upper atmosphere, its role in absorbing ultraviolet radiation, and the way in which this layer varies both naturally and in response to human activities.
    - Standard 9c. Students know the importance of water to society, the origins of California's fresh water, and the relationship between supply and need.

Project Plan Overview

- Introduce sustainability or "green" concepts by sharing a book or video
- Investigate what "green" features and actions exist in the school or home.
- Imagine new "green" features and actions that can be added to the list
- Create a "green" map artwork showing the "green" features and actions
- Reflect on the project
- Share the map with others
- Revisit the map to track changes or new knowledge

Introduction to Sustainability

Read and reflect upon a book or watch a video with youth to introduce the concept of sustainability and thinking "green." Suggestions include:

Elementary school youth:

- *The Lorax* by Dr. Seuss.
    - Reflective classroom exercises available at: http://teacherlink.ed.usu.edu/tlresources/units/byrnes-literature/alleman.html and http://www.ie.unc.edu/erp/resources/Lorax_and_Sustainable_Development.pdf
- *The Giving Tree* by Shel Silverstein.
    - Reflective classroom exercises available at: http://www.greeneducationfoundation.org/index.php?option=com_content&view=article&id=55:grade-1-day-2-the-giving-tree-and-receiving-tree&catid=51:waste-free-snacks&Itemid=350

Middle and high school youth:

- *Stuff: The Secret Lives of Everyday Things* by John C. Ryan and Alan Thein Durning. Curriculum materials available at: http://www.sightline.org/research/books/stuff/stuff_curriculum.pdf/view
- The Story of Stuff Video: http://www.storyofstuff.com/
- No Impact Project: Five 50-minute lesson plans for middle and high school on consumption, energy, food, transportation, and water: http://noimpactproject.org/educators-middle-high-school-environment-curriculum-html/

"Green" Feature Investigation

Go on an expedition throughout your school or home with your students to find out what "green" features your home or school has and what "green" actions students and other school community members take during the day. The list below can be used to spark ideas, or could be used to create a scavenger hunt. Some questions may require students to inquire of others such as building staff, so be sure to let them know the parameters for this activity.

Depending on your context, this could be a whole group activity or an activity done in small teams or pairs. This activity is designed to be an inquiry-based, interactive experience. Guiding questions about these features and actions could be: What do you think it is? How do you know? Where is it? If it's not here, where have you seen it or what have you heard about it?

Resource Conservation and Recycling	
Green Features	**Green Actions**
Recycling bins	Recycle cans, bottles, and paper
Recycled paper	Print double-sided or reuse the back
Water fountains (or other places to fill a water bottle)	Use a reusable water bottle
Motion sensor faucets	Turn off water when not using it
Energy-efficient hand air dryers in bathroom	Use only the paper towels you need
Grey water system (e.g., reusing water for garden or toilets)	Report leaks when you see them
Energy Conservation	
Green Features	**Green Actions**
Solar panels	Learn how solar panels work
Daylighting (e.g., windows, skylights)	Use daylight instead of light fixtures
Energy efficient lighting	Turn off lights when room not in use
Power management settings on computers	Turn off computers/monitors when done
Clean Air and Climate	
Green Features	**Green Actions**
Bike racks	Walk, bike, skateboard, carpool, or bus to school
Green cleaning supplies	Clean up spills and crumbs
Doormats	Scrape shoes on mats
Garden	Water the garden early or late in day
Food	
Green Features	**Green Actions**
Composting food scraps or yard waste	Take only what you want to eat
Local food sources for cafeteria	Buy and eat local foods
Reusable dishware in the cafeteria	Use reusable lunch box containers

Back in the classroom, ask youth to report on what they found and what they didn't find. Discuss with students why they think these features and actions are on the "green" list. Their answers will help you get a sense of what their current understanding is of "green" or sustainability issues and what knowledge they bring with them from past experiences. Provide supplemental information provided below when helpful. When possible, make connections to the introductory book or video. Key points to emphasize are the concept of cause and effect and the inter-related web of choices we make that affect the planet.

Resource Conservation and Recycling	
Green Features	**Green Actions**
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Energy-efficient hand air dryers in bathroom	Use only the paper towels you need
Grey water system (e.g., reusing water for garden toilets)	Report leaks when you see them

Why are these features and actions green?

Everything we use comes from the earth and its resources. Cans are made of metal that comes from inside the earth, paper is made from trees that grow on the earth, and the water many of us in Alameda County use comes from rain and snow collected in reservoirs.

- Some resources like metal are "nonrenewable." This means that when you use it up, there is no more.
- Some resources like trees are renewable, but they take a very long time to grow.
- The amount of some resources like water changes from year to year because of the weather such as a drought when there is almost no rain.

It is important to do everything we can to use only what we need, so that all these resources will last as long as possible.

- Recycling – or using things again – makes resources last longer.
- To recycle glass and plastic into new objects uses fewer resources than making them new, so recycling items over and over helps.

Each action we make and each item we use affects the how much resources there are in the world. Here are some examples:

- Recycling one ton of paper can save 17 trees and 380 gallons of oil. For more information in the Academy for Global Citizenship Handbook at http://www.agcchicago.org/pdf/AGC_book_072310.pdf
- Fixing a leaky faucet that drips at the rate of about one drip per second can save more than 3,000 gallons of water in one year. Fixing a leaky toilet can save 200 gallons of water every day. That's a lot of water! More info at http://www.epa.gov/WaterSense/water_efficiency/what_you_can_do.html

Energy Conservation	
Green Features	**Green Actions**
Daylighting (e.g., windows, skylights)	Use daylight instead of light fixtures
Energy efficient lighting	Turn off lights when room not in use
Solar panels	Learn how solar panels work
Power management settings on computers	Turn off computers/monitors when done

Why are these features and actions green?

The electricity we use to power our lights, computers, and appliances is created using natural resources from the earth. Most power plants in the United States use non-renewable fossil fuels like coal (50%) or natural gas (21%). Non-renewable means that once the resources are used up, they cannot be replenished in our lifetime. Both types of power plants use billions of gallons of water a day as they make electricity. It is important to use only what electricity we need because it uses such important resources. We can save or conserve energy easily by using daylight in our classrooms and homes whenever we can and turning off lights when we are not using them.

Some light bulbs are called “energy efficient” because they use less energy than other bulbs to make the same amount of light. Sunlight is a renewable resource that can be used to make electricity when collected by solar panels attached to the roofs of buildings.

March 26, 2011 is Earth Hour Day. Join millions of schools and families around the world who turn off the lights for one hour wherever they are at 8:30 pm. Participants are encouraged to make a pledge to go beyond the hour with a change they plan to make in the coming year to help the planet. More information at www.earthhour.org/

Clean Air and Climate Change	
Green Features	**Green Actions**
Bike racks	Walk, bike, skateboard, carpool, or bus to school
Green cleaning supplies	Clean up spills and crumbs
Doormats	Scrape shoes on mats
Garden	Water the garden early or late in day

Why are these features and actions green?

The air we breathe is a precious resource for humans and for every living creature on the earth. We can do several things to help keep the air clean:

- Cars put carbon dioxide into the air, a gas that causes climate change when it builds up in the earth's atmosphere. Cars also use non-renewable resources like oil to run. Walking, biking, skateboarding, carpooling or taking the bus to school whenever possible reduces the resources that are used and the greenhouse gases that are put into the air. Greenhouse gases like carbon dioxide trap heat in the earth's atmosphere making it hotter than is healthy for the planet. This causes changes in the weather or climate that makes it harder for plants to grow.
- Some cleaning supplies have chemicals in them that can pose health risks for humans and for creatures in lakes and streams after the cleaning supplies are flushed into our water ecosystem. Green cleaning supplies are healthier for humans and our ecosystem.
- Up to 80% of indoor dust and dirt is tracked inside on shoes. Doormats reduce the amount of dirt and dust that comes indoors and also reduces the need for cleaning supplies and wear and tear on floors.
- Gardens can help clean the air. Plants use carbon dioxide and produce oxygen when they photosynthesize (use the sun as food).

Ideas for creative alternatives to driving to school and more information on putting in a garden at your school in the Academy for Global Citizenship Handbook at http://www.agcchicago.org/pdf/AGC_book_072310.pdf

Food	
Green Features	**Green Actions**
Composting food scraps or yard waste	Take only what you want to eat
Local food sources for cafeteria	Buy and eat local foods
Reusable dishware in the cafeteria	Use reusable lunch box containers

Why are these features and actions green?

Like other resources, the food we eat is a resource that comes from the earth. Non-renewable resources from the earth like oil are used to move food from where it is grown to where you buy it.

- Buying local foods and taking only what you want to eat means there are more resources for others.
- Instead of throwing away leftover food like trash, composting is a natural way to change it into fertilizer or plant food that helps gardens grow. It saves space in the landfill for things that can't be recycled or reused and reduces the methane produced by food as it decomposes in a landfill. As you may already know, methane is a greenhouse gas that traps heat, making the planet hotter. Once it is released, methane stays in the atmosphere for more than 10 years and can trap 20 times more heat than carbon dioxide.

More information on composting and greening your food program at your school is available in the Academy for Global Citizenship Handbook at http://www.agcchicago.org/pdf/AGC_book_072310.pdf

Imagine Change

Discuss with students what additional ideas they have for how they could help save energy or reduce waste? What actions could they take to help their school or home “go green”? Add these new features and actions to the “green” list. This could be a brainstorm session or this could involve research on the internet. There are sites devoted to all the ways we can save energy or keep the air clean.

Ask students to choose an action that they would like to do. Discuss what would be necessary to make the change. What are some of the challenges they might face? How might they overcome the obstacles? What leadership traits or life skills would help them? Who could help make the change?

The Green Map

Brainstorm with youth how they could make an artwork about the green features and actions at their school or home. Options could include:

- A representational map that shows the features and actions and where they happen in the physical space. Each youth could make his or her own map or pairs or small group could work on different rooms or sections of the school or home and piece them together as a single large map. This map could include drawings or collage images or photographs. This map could involve 3-dimensional aspects such as pop-up or fold-out sections that reveal information about a green feature or action. An additional challenge would be to create this map from recycled materials. Discuss with students options for overall composition. Discuss why the word “green” has been adopted as a symbol of sustainability and how color can be used to express their ideas about the features and the actions.
- A time-based map using a clock design rather than a spatial layout. The clock face could show the “green” features and actions as the youth interacts or enacts them throughout the day. As with the previous option, this could be done individually or in groups. Again, this could involve a range of materials including recycled materials.
- A site-specific visual map of the school environment using signage at locations around the school campus where green actions take place. The signage would introduce the students' learning and thinking to the rest of our school community while providing information and helpful reminders to the whole community. Students could be encouraged to think through how the design and colors of the signage could express their ideas, interact with the environment and appeal to the viewer.
- A theatrical, musical or dance-based map in which the group enacts a series of short vignettes that share the green features and actions in the school or home. Youth could be paired up by “green” feature and corresponding actions to share information about the feature while demonstrating the action. Discuss with students what would be the best order of the skits that show how they are inter-related.
- An interactive map wherein the group leads another group on a tour of the school enacting the green actions while giving information about the green features.

The process of creating the artwork may cause students to ask new questions about sustainability and the environment. Encourage students to follow where their questions lead by doing research to deepen their understanding of the topic beyond the initial information provided. Optimally the art process can help them investigate the topic and test their understanding as much as it is a way to express what they know.

Project Reflection

- Discuss the project experience with students asking them what they noticed about themselves and their experience during the project. What challenges did they face? How did they overcome them? What did they enjoy about the process? What do they know now that they didn't know before? What insights do they have about their school or home now that they have created the artwork? What do they understand about "green" or sustainability topics? Thinking about the project now, what are they most proud of?
- Identify a "green" action that the youth would like to make in their immediate future and how they will use a leadership trait or life skill to help achieve it.
- Distribute the Art IS Education artist statement form to students. Youth could fill write their artist statement individually or in pairs or as a whole group. Explain that these forms may be submitted with photographs of the project artwork to the Alameda County Sustainability Program. Explain that the quotes may be included with samples of the finished artwork in future editions of the Art IS Education Sustainability Education Guide or web site.
- Thank the students for their participation. Share moments that you saw students demonstrate understanding about the sustainability issues, positive behaviors that help the planet and leadership traits to encourage others. Share ways in which you learned more about the art making and sustainability issues by working with them.

Project Sharing

Discuss with students who they would like to share this project with. Options include another class or family, the principal or staff, parents or family members. Create a time to share the map artwork with others. In preparation for sharing the artwork, review youth reflections so they can share them after presenting the artwork. After the presentation, invite the audience to:

- Share something they noticed or that struck them about the presentation and reflections.
- What questions they may wonder about after seeing the presentation.
- If they feel inspired to make a "green" change for themselves.

End by thanking the audience for sharing the experience. Share with the audience what you noticed about the participation of the youth during the project and presentation. Share examples of the obstacles they overcame, life skills they demonstrated, and the creativity that they brought to the project.

Map in Review

In a week or so, revisit the map artwork to track changes or new knowledge. Use the conversation as a way to check in on what progress they are making with their personal "green" action change and to find out if there are new items to add to the "green" list. It is also an opportunity to continue to reflect on and reinforce what they learned during the project. If possible, the artwork could be revised by adding new aspects to the artwork.

Sharing With Alameda County

In honor of Art IS Education 2011, Alameda County Sustainability in partnership with the Alameda County Arts Commission plans to feature youth artwork and sample lesson plans on their web site. If you would like to submit your youth art on ecological themes for consideration, please submit a project description, photos of your project and student artist statements to Violet Juno, Alameda County Arts Commission's Art IS Education Featured Event Coordinator, at violetjuno@gmail.com.

Part 3: Online Resources

Here are a wide range of online resources for materials, information and curricula to jumpstart your work with students.

Art Supplies

- **East Bay Depot for Creative Reuse:** An ecological “treasure trove” of low-cost art & craft materials in Oakland, with an onsite Teachers’ Resource Zone: http://creativereuse.org/
- **Resource Area for Teaching:** RAFT's mission is to help educators transform the learning experience through "hands-on" education that inspires the joy and discovery of learning: http://www.raft.net/
- **SCRAP:** By offering low cost supplies, creative reuse workshops, educational field trips, art exhibitions, and more SCRAP gives students of all ages the opportunity to learn and pass on the value of creative reuse: http://www.scrap-sf.org/

Environmental Art and Videos for Inspiration

- **GreenMuseum:** Environmental art in an online “museum” and extensive toolbox for educators including case studies: http://greenmuseum.org/
- **Washed Ashore:** Art made with plastics washed up on Oregon beaches: http://washedashore.org/
- **Chris Jordan’s Running the Numbers:** Photographs illustrating the vast amounts of resources used in the U.S.: http://www.chrisjordan.com/gallery/rtn/
- **350 Earth; Floating Land:** Art focused on climate change: http://earth.350.org/; http://www.floatingland.com.au/contact
- **Clean Air Trek:** Student-produced videos about driving less produced via *Alive In The Neighborhood: Eco Interventions & Experiences* program: http://www.cleanairtrek.com/student-involvement

Curricular Resources

General

- **Facing the Future:** Curricula covering climate and sustainability with a global perspective, for K-12: http://www.facingthefuture.org/Curriculum/CurriculumHome/tabid/113/Default.aspx
- **State of California:** Collection of state agencies' environmental education curriculum resources: http://www.cde.ca.gov/pd/ca/sc/oeeresources.asp
- **U.S. Environmental Protection Agency:** Collection of links to teaching resources: http://www.epa.gov/teachers/teachresources.htm

Introduction to Sustainability

- ***The Lorax:*** Classroom exercises and video associated with classic book by Dr. Seuss: http://teacherlink.ed.usu.edu/tlresources/units/byrnes-literature/alleman.html and http://www.ie.unc.edu/erp/resources/Lorax_and_Sustainable_Development.pdf
- ***The Giving Tree:*** Classroom exercises associated with classic book by Shel Silverstein: http://faculty.washington.edu/pkahn/articles/Environmental_Education.pdf and http://www.greeneducationfoundation.org/index.php?option=com_content&view=article&id=550:grade-1-day-2-the-giving-tree-and-receiving-tree&catid=51:waste-free-snacks&Itemid=350
- **No Impact Project:** Five 50-minute lesson plans for middle and high school on consumption, energy, food, transportation, and water: http://noimpactproject.org/educators-middle-high-school-environment-curriculum-html/

Resource Conservation

- ***Stuff: The Secret Lives of Everyday Things:*** Curriculum guide to accompany book revealing web of connections and impacts behind items: http://www.storyofstuff.com/http://www.sightline.org/research/books/stuff/stuff_curriculum.pdf/view
- **Redefining Progress:** Elementary and high school lesson plans about the ecological footprint (amount of land and water required to support an individual's consumption): http://www.oercommons.org/browse/collection/redefining-progress
- ***Story of Stuff:*** Twenty-minute video with teaching tools for high school (and faith-based communities): http://www.storyofstuff.com/ and http://www.storyofstuff.com/teach.php

Recycling

- **Doing the 4Rs - A Classroom Activity Guide to Teach Reduce, Reuse, Recycle and Rot:** StopWaste.Org's 24 California standards-based lessons and five thematic units for fourth/fifth grades: http://stopwaste.org/home/index.asp?page=1078
- **irecycle@school:** StopWaste.Org's free services for public schools in Alameda County, including field trips, assemblies, and teacher training: http://stopwaste.org/home/index.asp?page=5

Energy

- **EnergyQuest:** California Energy Commission's collection of lesson plans relating to energy: http://energyquest.ca.gov/teachers_resources/index.html
- **National Wildlife Federation:** Collection of curriculum resources for elementary, middle, and secondary levels: http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School/Pathways/Energy/Curriculum.aspx

Climate

- **Bay Area Air Quality Management District:** *Protect Your Climate* curriculum, 16 lessons for fourth/fifth grades: http://www.ca-ilg.org/node/1380
- **National Wildlife Federation:** Climate Classroom, including resources for younger children: http://www.climateclassroom.org/; http://www.climateclassroomkids.org/teacher_main.aspx
- **Union of Concerned Scientists:** Collection of peer-reviewed materials for educators, including curriculum guide on California-specific impacts of climate change for grades 9-12: http://www.ucsusa.org/global_warming/science_and_impacts/impacts/global-warming-materials-for.html
- ***An Inconvenient Truth:*** lesson plans for high school associated with Oscar-winning documentary: http://www.climateclassroom.org/teens/lessonplans.cfm
- **Alliance for Climate Education:** collection of resources in science, energy, and social studies to build on the Alliance's schoolwide climate assemblies: http://www.acespace.org/teachers/curricula

Food

- ***Food Inc.:*** Discussion guide associated with documentary, for high school: http://www.ecoliteracy.org/downloads/ecological-intelligence-teachers-guide
- ***Nourish:*** Discussion guide associated with documentary, for junior high: http://www.ecoliteracy.org/downloads/nourish-companion-guides

Greening Your School's Operations and Curriculum

- **Go Green Initiative:** Association of schools offering resources including environmental action Planning Guide: http://gogreeninitiative.org/
- **Green Schools Program:** Alliance to Save Energy's program to empower students to help their schools save money and energy: http://ase.org/programs/green-schools-program
- **EcoSchools USA:** National Wildlife Federation's seven step program to become an Eco-School: http://www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA.aspx
- **Green Schools Initiative:** Initiative to create healthy schools for students, this initiative provides information, toolkits, and a buying guide: http://www.greenschools.net/
- **Academy for Global Citizenship Sustainability Handbook:** This resource includes information on dozens of ways to involve students, teachers, parents, and staff in going green as a school community: http://www.agcchicago.org/pdf/AGC_book_072310.pdf
- **Center for Green Schools:** This project of the U.S. Green Building Council provides information on how and why to green your school as well as curriculum, resources, and trainings: http://centerforgreenschools.org/main-nav/k-12/greenschool/interactive
- **San Jose Go Green Schools:** This City of San Jose project covers the key aspects of a green school as well as case studies and fundraising information: http://www.sanjoseca.gov/esd/schools/default.asp

Greening Your Home

- **Sierra Club Green Home:** Ten quick ways to green your home: http://www.sierraclubgreenhome.com/go-green/home-performance-contractors/10-quick-ways-to-green-your-home-2/
- **Tree Hugger:** Ten tips for going green at home: http://www.treehugger.com/files/2006/03/ten_tips_for_a.php
- **Planet Green:** Suggestions for how to green your home including electricity, appliances, toys, laundry, garden, furniture and recycling: http://planetgreen.discovery.com/go-green/green-index/home-garden-guides.html

Art IS Education Sustainability Education Guide Contributors

Violet Juno, Art IS Education Featured Event Coordinator, Alameda County Arts Commission

Emily Sadigh, Sustainability Project Manager, Alameda County Sustainability Program

Nate Ivy, Service-Learning Waste Reduction Project, Alameda County Office of Education

Lara Jealous, Teaching Artist and Montclair Elementary School Art and Environmental Education Co-Chair, Oakland Unified School District

Marion Coleman, Creative Power Teaching Artist, Alameda County Arts Commission

Hershell West, Creative Power Teaching Artist, Alameda County Arts Commission

Lilli Lanier, Creative Power Teaching Artist, Alameda County Arts Commission

Sibila Savage, Creative Power Photographer, Alameda County Arts Commission

Partner Organization Information

Alameda County Arts Commission
A Division of the County of Alameda
Office: 1401 Lakeside Drive, Suite 603, Oakland, CA 94612
Mail: P.O. Box 29004, Oakland, CA 94604-9004
www.acgov.org/arts

Alameda County Sustainability Program
General Services Agency, County of Alameda
www.acsustain.org

Alameda County Office of Education
Service-Learning Waste Reduction Project
313 W. Winton Avenue, Hayward, CA 94544-1198
schools.stopwaste.org

Alameda County Probation Department
Juvenile Justice Center
2500 Fairmont Drive, San Leandro, CA 94578
www.acgov.org/probation

Alameda County Office of Education
Art IS Education, a project of the Alliance for Arts Learning Leadership
313 W. Winton Avenue, Hayward, CA 94544-1198
www.artiseducation.org

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