The right to a clean environment is a fundamental part of every person’s right to live in a physical environment that does not threaten his or her health, livelihood, or well-being and makes it possible to live a productive life in dignity. The 1972 United Nations Conference on the Human Environment formally recognized the interrelation of environment and human rights, affirming that “man’s environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights — even the right to life itself.”

Today however, all over the world, people are suffering from the effects of ecosystem decline due to climate change and human activity. The impact of environmental degradation poses a direct threat to a wide range of universally recognized human rights, such as the right to life, food, adequate housing, and water. Environmental challenges include: water shortages, over-fishing, floods, soil erosion, landslides, water pollution, destruction of forests and ecosystems, spreading deserts, and tropical storms. As a result, an international assessment of the state of the world’s ecosystems concluded: “If we choose to continue our current patterns of use, we face almost certain declines in the ability of ecosystems to yield their broad spectrum of benefits -- from clean water to stable climate, fuel wood to food crops, timber to wildlife habitat.” With 2.4 million people dying globally each year from causes directly attributable to air pollution (World Health Organization), it is obvious that human-caused environmental degradation has grave human rights implications.

Because we share one environment, the protection and management of the environment is an issue for which all nations, communities, and people must share responsibility. In celebration of Earth Day 2011, this issue of Rights Sites News is dedicated to helping teachers engender in their students a commitment to respecting and improving the environment, and making this world a healthier, cleaner, and more sustainable place for all living beings.

DID YOU KNOW?

Increasingly, schools are finding ways to take better care of our environment.

Find ways to “green” your school through examples of teachers and students across the United States who are promoting the right to a clean environment and making our planet a healthier and safer place for every human being!
Lesson: The Right to a Clean Environment Role-Play

**Goal:** To help students gain an understanding of how the environment is connected to their daily lives and human rights.

**Objectives:**
- Students will adopt the role of a character whose life is affected by the environment.
- Students will consider the ways in which the environment affects daily life.
- Students will learn about the right to a clean environment.

**Time Frame:** 1-2 class periods

**Grades:** 3-5

**Materials:** A large piece of paper or poster board, Handout: Character Cards

**Teacher Background:**
The right to a clean environment is the right to live in an environment that does not jeopardize a person’s health, livelihood or well-being. This right is closely connected with the right to health and the right to an adequate standard of living.

**Procedure:**

1. **Assign roles.** Photocopy Handout: Character Cards, and cut up the character cards. Ask each student to pick a card. Tell students that their cards explain the characters they will play in the activity. Give the students a few minutes to read their cards and to think about the lives of their characters. Have students volunteer to read their character card out loud to the class. Ask them to picture their character’s family, home, and environment. Ask them to think about their character’s daily routines and how the environment affects their character’s daily life.

2. **Role-play.** Organize students into a large circle. Read the following statements, and ask students to step into the circle if their character would agree with the statement. If students are uncertain, have them remain in place or make an educated guess. Go through one as an example before proceeding with the activity.
   - My life is affected by the environment I live in.
   - I live in a clean environment.
   - I live in an unclean environment.
   - In my daily life, I do things to try to help the environment.
   - I depend on the environment for food.
   - I do not have clean water to drink.
   - Environmental problems affect the way the members of my family live.
   - My life would be better if my environment was cleaner.
   - I can take action to improve my environment.
   - I can take action to help improve the environment that other people live in.

3. **Discuss.** Debrief the role-play by asking students the following questions:
   - Do you have anything in common with any of the characters?
   - Do you think there are people in your neighborhood or in your city whose lives are similar to your character’s life? Why or why not?
   - Do you think there are other people in this country whose lives are similar to your character’s life? Why or why not?
   - What responsibilities do we have to make sure that everyone can live in a healthy environment?
   - How can you make a difference for people who are similar to your character?

4. **Define.** Ask students if any of them can think of a definition for the right to a clean environment. If not, write this definition on the board:
   
   The right to a clean environment is the human right to live in an environment that doesn’t hurt your health or well-being. This includes clean air and clean water.

5. **Take action.** Ask students to write down a simple change or two they could make in their own lives to help take care of the environment. For example, they could make a personal commitment to recycling or start a recycling program at school; waste
less water by taking shorter showers or not running the water when they brush their teeth; or unplug electronic chargers when not in use. Encourage students to be as specific as possible with their personal action plans.

6. **Class pledge.** Ask students for suggestions of a change the class could make together to help take care of the environment. Write down a list of ideas on the board. Changes could be recycling paper, reusing scrap paper, or turning out the lights for an extended period of time when the class leaves the room. Once students have given their suggestions, vote as a class to choose a change from the list. On a large piece of paper, write out the class pledge to make this change together. Leave room at the bottom of the page so students can sign their names under the pledge. Once all of the students have signed, display the pledge in the classroom.

### Handout: Character Cards

<table>
<thead>
<tr>
<th>I live in a desert. Water is expensive, so I must be careful not to drink too much, even though it is often very hot outside.</th>
<th>My family bikes more and drives less than we used to because we want to help keep our air clean.</th>
<th>I live in a city, I have asthma, and there are some days I can’t go outside because the air is too dirty.</th>
<th>My family grows vegetables in our backyard. When there is enough rain and sun, we grow enough vegetables to last the whole summer.</th>
<th>I planted a tree in my backyard to help keep the air clean.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I live near a river. My family had to stop eating the fish we caught in the river because the dirty water made the fish unsafe to eat.</td>
<td>My family uses cloth bags to carry home our groceries so that we don’t waste paper or plastic bags.</td>
<td>I turn off the lights when I leave the room to help the environment by saving energy.</td>
<td>My mom is having a baby soon, and I convinced her to use cloth diapers instead of the disposable kind that end up in landfills.</td>
<td>My family composites kitchen scraps and newspapers instead of throwing them away.</td>
</tr>
<tr>
<td>The tap water in my city is brown. My family must buy bottled water for a clean drinking source.</td>
<td>I live near a large discount retailer that has been accused of dumping garbage into a nearby river. My neighborhood group has threatened to take them to court.</td>
<td>On Earth Day, my class picked up trash near our school to make our neighborhood cleaner.</td>
<td>My family lives in a nice apartment building, but whenever someone smokes outside by the entrance, it wafts into our windows, and I feel nauseous.</td>
<td>When a company wanted to cut down trees to construct a building near my house, I wrote to the mayor of my city to ask her to protect our trees.</td>
</tr>
<tr>
<td>My class helped start a recycling program at our school so that our school would produce less trash.</td>
<td>I grow potted plants inside my house to keep the air in our house cleaner.</td>
<td>A student group that I’m involved in got local companies to donate energy efficient light bulbs for the entire school.</td>
<td>Because my class wrote letters to our principal, now our school is cleaned using products that won’t make us sick.</td>
<td>My neighbors get together in the spring to clean garbage off the streets after the snow melts.</td>
</tr>
<tr>
<td>My city is considering putting a landfill near a park where I play sports. My parents are worried about my exposure to toxins.</td>
<td>I don’t leave the water running when I brush my teeth because I want to save water.</td>
<td>My school uses chemicals to make the lawn green. Some of the chemicals they use could make me sick.</td>
<td>My teacher uses paper that is recycled from the school office for our spelling tests.</td>
<td>When I have outgrown my clothes, my parents give them to my cousins and younger kids in the neighborhood.</td>
</tr>
</tbody>
</table>
Green Your Classroom

As the teacher in your classroom you are a leader on all types of issues, including environmental concerns, when you choose to run a visibly Green Classroom. If your students watch you, day in and day out, recycling paper products and turning off lights when you leave the classroom, you are sending them a positive, proactive message about conserving the earth’s resources and helping the environment in big and small ways. It’s easier than you might think to set up and run a Green Classroom. Here are some suggestions for little things you can do on a daily basis to show students how to be environmentally conscious:

CLASS PROJECTS

1. **Recycle competition:** See which class can save the most newspapers, soda cans, water bottles, or other recyclables.

2. **Start a garden:** You can grow herbs or vegetables, and let the students sample what you grow.

3. **Compost:** Start composting either as a class or get the whole school involved and use it in your garden!

4. **Plan an end-of-the-day room check:** During the last few minutes of the day, have students make sure all of the water faucets are completely turned off, blinds are closed, lights are off, and windows are closed.

5. **Adopt the earth:** Your class can adopt a section of rainforest, a block on your street, or any other place you want to make a difference.

6. **Use real plants for class pets:** If your classroom has a pet turtle, lizard, or fish, use real plants instead of synthetic or plastic plants. It’s better for the greater environment, as well as your little friend.

7. **Calculate your carbon footprint:** Calculate your classroom’s carbon footprint with this calculator: www.footprintnetwork.org/en/index.php/GFN/page/calculators. Then, discuss ways to minimize your effect on the environment.

8. **Take an eco-friendly field trip:** Walk to a nearby park to examine local ecosystems without using extra gas.

9. **Raise monarch butterflies:** Teach your students about natural ecosystems and the developing stages of life through butterflies. For more information, visit: www.eirc.org/website/Programs+and+-Services/Monarch-Teacher-Network.

10. **Plant a tree:** This is a popular tradition for many schools on Earth Day, but you can have your class plant a tree or bush any day.

11. **Put on a show:** Educate the rest of your school by putting on a play or presentation that goes over environmental topics like global warming, preserving ecosystems, or recycling. An extra challenge would be to only use organic, natural, or non-toxic supplies to organize the event. To perform a musical commissioned by The World Wildlife Fund that celebrates our astonishing planet in all its rich diversity, but also examines changes brought about by human activities in a modern world, go to: www.wwf.org.uk/what_we_do/working_with_schools/one_sun_one_world_musical.

12. **Campaign for an Idle-Free School Zone:** These Idle-Free School Zones are catching on and encourage parents arriving at school to pick up their kids to turn off their engines and reduce pollution. For more information, visit: www.screamtobegreen.com/2007/11/idle-free-school-zones.

13. **Apply for a grant:** The Live Green Teacher Grants award teachers $1,000 to put their original green ideas and campaigns to work in the classroom. For more information, visit: livegreen.discoveryeducation.com.
SCHOOL SUPPLIES

1. **Use water-based paints:** Use water-based paints for a non-toxic creative project.

2. **Green art projects:** Make art without hurting the environment. The website *Art Here and Now* provides a list of green art projects that are good for the environment. Some utilize natural ingredients and products like clay and wood. To learn more, visit: [www.arthereandnow.com/2007/10/making-art-without-unmaking-the-environment](http://www.arthereandnow.com/2007/10/making-art-without-unmaking-the-environment).

3. **Use green tissues:** Buy tissues that are chlorine-free and have no dyes or artificial fragrances, so they aren't a threat to the ozone layer or to children.

4. **Make your own cleaning kit:** Make your own batch of non-toxic, environmentally friendly cleaning supplies. For ideas, visit: [eartheasy.com/live_nontoxic_solutions.htm](http://eartheasy.com/live_nontoxic_solutions.htm).

5. **Stock your room with green school supplies:** If you or your school’s budget can afford it, stock your room with green school supplies, like recycled notebook binders and biodegradable corn starch pens, and pencils made of recycled wood.

6. **Acid-free glue stick:** For all your art projects, use acid-free glue sticks, which are less messier than liquid glue and better for the environment.

7. **Recharge batteries:** Rechargeable batteries can save the earth from harmful metals and compounds that can’t be broken down when you toss out old batteries.

8. **Offer organic snacks:** Besides being good for the earth, these snacks are also better for students’ health and focus.

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PRESERVING RESOURCES

1. **Make sure water faucets are turned off:** Did you know one drop per second adds up to 2700 gallons in a year? Make sure your kids turn the water off all the way.

2. **Open windows:** If the temperature is nice outside, regulate your inside temperature by opening up the windows. Fresh air will also rejuvenate you and your students.

3. **Water your garden with your leftovers:** If you have leftover water from a cooking or science assignment, use it to water plants inside or outside, instead of throwing it down the drain.

4. **Check for leaks:** Check your windows for insulation leaks and your faucets for water leaks, which can waste electricity and water. Notify your school’s maintenance department to have them fixed as soon as possible.

5. **Use biodegradable cups and utensils:** For class parties and snack time, keep a stash of biodegradable plates and utensils.


7. **Encourage students to use both sides of the paper:** Teachers have been battling this problem for a while. Ask your students to use both sides of the paper for homework assignments. You can even reward them an extra bonus point or two if they remember.

8. **Open the blinds:** Let in natural light and turn on a desk lamp when you’re packing up for the day or in your room by yourself during lunchtime.

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RIGHTS SITES NEWS
Spring 2011

RIGHT TO A CLEAN ENVIRONMENT TEACHER RESOURCES

2010 International Year of Biodiversity
This site provides numerous short films on the importance of a clean environment.

Clean Air Campaign Lesson Plans
http://www.cleanaircampaign.org/Kids-Schools/Lesson-Plans
Lesson plans for grades K-12 that educate students on air quality, and how air pollution affects the world around us. Multiple lessons and activities available for each age group.

Climate Change, Wildlife, and Wildlands Toolkit
http://epa.gov/climatechange/wyced/CCWKit.html
This toolkit is part of the United States Environmental Protection Agency, and offers information on wildlife and public lands, and how the changing climate impacts their ecosystems. Intended for middle school students, it includes videos and a complete educator’s toolkit.

Earth Day
http://www.earthday.org
The Earth Day Network supplies a complete list of resources, including lesson plans, campaigns, guides and quizzes, and school projects.

Earth Force
http://www.earthforce.org/
This organization "engages young people as active citizens who improve the environment." The Tools for Teachers section provides resources for getting involved in the classroom.

EcoKids
http://www.ecokids.ca/pub/index.cfm
Started as a part of Earth Day for Canada, this interactive site provides many eco-games and activities for students, as well as a full resource list of kits and activity sheets for educators.

Energy Education & Workforce Development
http://www1.eere.energy.gov/education/lessonplans/default.aspx
This website, sponsored by the U.S. Department of Energy, has multiple links to teacher education activities and lesson plans for students in grades K-12. The lesson plans provided use labs, projects, and other activities to educate and inform the students about energy-related topics.

EPA Student Center
http://www.epa.gov/students/
The EPA Student Center is part of the United States Environmental Protection Agency. It includes a wide variety of student projects and activities, as well as a comprehensive Teaching Center with lesson plans and free publications to teach students about the environment.

Field Trip Earth
http://www.fieldtripearth.org/educator.xml
This site includes a list of resources for educators, including games, letter writing, debates, and campaigns. Each educator strategy provides a description of the desired learning goal and step-by-step teaching instructions.

Green School Project
http://www.greenschoolproject.com/teach/lesson_plans/default.aspx
Offers lesson plans and activities in addition to some cost-saving strategies for your school.

Green Wave
http://greenwave.cbd.int/en/home
The Green Wave is a global campaign focused on providing children and youth the information and resources necessary to educate them on the importance of a healthy environment. Their campaign to promote biodiversity awareness includes global tree planting initiatives and educator resources, including booklets, lesson plans, and toolkits.

Go Green Database
http://www.edutopia.org/go-green
Explore their ever-expanding treasure trove of environmentally conscious teaching tools. Search for lesson plans, websites, and educational resources by topic, grade level, cost, or location, or add your own resource.

How Pollution Disrupts Our Natural Environment
http://mypages.iit.edu/~smile/cb1198.htm
An interactive lesson plan for elementary school children to learn about the effects of pollution on plant and animal life. Students conduct simple scientific investigations and experiments and discuss their discoveries.

Kids For A Clean Environment
http://www.kidsface.org/
Kids F.A.C.E. is a non-profit organization that helps kids establish chapters in their communities to keep the environment clean.

Kids’ Planet
http://www.kidsplanet.org/
Kids’ Planet has a full range of information about wild animals and their habitats. It includes resources and ideas for ways children can help to keep the environment clean to protect endangered animals. Teacher toolkits and educational materials for elementary and middle school children are also available.

Kids Saving Energy
http://www1.eere.energy.gov/kids/
This site, sponsored by the U.S. Department of Energy, provides games, videos, facts, and tips for children on how to save energy.

Project Wild
http://www.projectwild.org/EducatorResources.htm
A widely used conservation and environmental curriculum used by educators for grades K-12.

Save a Snowman
http://www.saveasnowman.org/home.htm
Introduce your students to global warming by sponsoring a snowman and learning about saving the rainforest.

Student Environmental Action Coalition
http://www.seoc.org/
This group provides information on local events and global campaigns that are devoted to saving the environment.

United Nations Environment Programme
http://www.unep.org/Tunza/
The “Tunza” Project is part of the United Nations Environment Programme that seeks to educate young persons about the environment and how to treat the planet well. It includes materials and information for youth and young children, and provides multimedia resources and activities for each age group.
BOOKS FOR YOUTH ON THE ENVIRONMENT

The Everything Kids’ Environment Book, by Sheri Amsel
This book features everyday choices kids can make at school, home, and play to help protect the planet and keep the environment healthy. Ages 9-12.

Hoot, by Carl Hiaasen
www.carlhiaasen.com/books.html
Roy is new to Trace Middle School and is having a hard time making friends. A series of events leads him to an important discovery involving endangered owls, a greedy developer, and a mismatched crew determined to help save the day. Ages 10-15.

Michael Recycle Meets Litterbug Doug, by Ellie Bethel, Alexandra Colombo
www.myworthwhilebooks.com/pd-childrens-books-litterbug-doug.cfm
Earth’s superhero Michael Recycle is back to save the world from the awful garbage of Litterbug Doug. The green crusader must work fast to convince Litterbug Doug and his army of rats that wasting and garbage will ruin the planet. Ages 4-8.

Operation Redwood, by S. Terrell French
www.operationredwood.com/home.php
Julian Carter-Li stumbles across secret information that threatens the existence of the Redwood trees of Big Tree Grove. Julian and a mysterious helpmate try to save the grove before it’s too late. Ages 8-12.

Togu and the Trees of Life, by the United Nations Environment Program
www.unep.org/publications/search/pub_details_s.asp?ID=3994
Children’s environmental awareness booklet on forests with its fauna and flora. This publication is aimed at sensitizing children to the importance of forests and the need to conserve them and also promote tree planting. Ages 5-9.

Whole World, by Christopher Corr & Fred Penner
store.barefootbooks.com/whole-world-mini-edition.html
The Whole World children’s book and sing-along CD helps kids appreciate the beauty of the world and the importance of caring for it. Ages 3-7.

Why Should I Protect Nature? by Jen Green, Mike Gordon
www.greenwardshop.com/shop/read/kids-books/8075-why-should-i-protect-nature
“Why Should I Protect Nature?” helps children learn the importance of taking care of the environment. Ages 4-8.
FEATUERED WEBSITE: THE GREEN SQUAD

WWW.NRDC.ORG/GREENSQUAD/

The Green Squad teaches kids about the relationship between their schools and environmental and health issues. Guided by four environmentally conscious students known as the “Green Squad,” students explore a colorful virtual school room by room, and use the mouse to locate potential hazards. Students can then use the resources on the website to investigate how green their own school is, and learn how to make their school and the planet a greener place.

The site is designed primarily for students in fifth through eighth grade, but also offers information for younger and older students. Parents and teachers will find the site useful, as well -- the school’s library and parent-teacher room offer a wide range of fact sheets and environmental resources. Check out this great list of web links for kids: www.nrdc.org/reference/kids.asp.

The Green Squad is a project of NRDC, the Natural Resources Defense Council, a national environmental group with more than 500,000 members, and the Healthy Schools Network, an organization that works to protect children’s environmental health in schools.

ADDITIONAL RESOURCE: CENTER FOR ENVIRONMENTAL EDUCATION

WWW.CEEONLINE.ORG

For over 20 years, the Center for Environmental Education (CEE) has served as an international resource center and clearinghouse for environmental education. They believe that anyone can become an environmental leader and that teachers, administrators, students and parents must be well informed and supported toward that end. They provide the necessary resources, curriculum, expertise, and guidance to cultivate environmental leadership in K-12 schools and work to create environmentally healthy schools where children learn how to choose sustainable lifestyles. Here are a few of their excellent resources:

Blueprint for a Green School. An online resource for addressing environmental health and lowering carbon emissions. Select a topic and begin moving towards change. Move through three levels: Upload Knowledge, Take Some Action, and Go the Extra Mile – transforming your school one step at a time.

The Curriculum Library. A database of reviewed curriculum on environmental issues. All of the entries have been evaluated by trained educators and mapped onto the North American Association for Environmental Education’s Guideline for Excellence. Search by subject area, grade level, or time frame to find the lesson that fits your needs.

The Services of the Center for Environmental Education. A service provided by CEE to help you and your school integrate your building and grounds into the lives of the people who learn, work, or play there. CEE will help you highlight the sustainable aspects of your facility and bring its green qualities to the forefront. CEE can also help individualize your school's environmental curriculum to fit the special features of green building design by integrating curricular approaches that use green building elements as the focus to teach about sustainability, climate change, and related environmental issues.
GREENING A K-12 CURRICULUM
By Lisa Bennet
Center for Ecoliteracy

Seemingly small things can lead to big changes in a school, when the moment is right and the community is willing. But changes that ultimately cut across all disciplines and grades are truly remarkable, especially when they take place in an institution founded back when Grover Cleveland was president and California had only recently become the 31st state in the union. Still, that is what happened at Head-Royce School, a K-12 independent school in Oakland, California that has committed itself to greening its entire curriculum.

The story begins one spring day in 2006 when Alejo Kraus-Polk, a 15-year-old sophomore, walked into head of school Paul Chapman's office on a mission: He wanted to invite the executive director of the Berkeley-based Green Schools Initiative to Head-Royce because he wanted to see his school go green. And he was not alone. Shortly after, junior Yaier Heber would be elected student council president on a platform that emphasized environmental action.

Chapman, who saw Kraus-Polk as "nature smart" and part of a growing students' crusade for the environment, approved the request and attended the talk. Having recently seen Al Gore's *An Inconvenient Truth*, he was immediately hooked.

"That period of time was like a moment of spontaneous combustion," recalls Chapman, who has led Head-Royce for 25 years. "For me, it was like revisiting 1968." It became clear that today's environmental issues are so momentous, urgent, and central to education that they present an opportunity to take a stand on the right side of history. At this point of instability, in other words, Chapman provided the leadership that allowed new structures, new forms of behavior, and a new order to emerge in the ways in which Head-Royce related to the environment.

Asking himself what Head-Royce could do to become a model green school, Chapman decided the most important first step was to signal commitment from the top down. So he went to the board and persuaded them to approve a green mission comprising four goals:

1. Create a healthy environment.
2. Use resources in a sustainable way.
3. Develop an educational program.
4. Pursue a nutritional health program.

"Putting this in place before we got started was critical," says Crystal Land, assistant head of school and academic dean. "'Green' didn't just mean composting and recycling, or even greening the building. But this [statement of goals] opened things up to discussion of the need for a green curriculum and role modeling, and what all of this means in the classroom."

It also led to an explosion of activities — initiated by students, faculty, staff, and administrators. Among them, Head-Royce:

- Formed a green council of 12 voting members, most of them students;
- Changed the school's mission statement to add a "love of nature" to the qualities that educators seek to develop in their students;
- Installed more than 400 solar panels;
- Turned a steep hill into a lush garden of native plants, fruit trees, and other edibles to be used as an outdoor classroom;
- Conducted a student-run trash audit and cut its overall landfill output in half; and
- Held school assemblies and an all-day conference on sustainability for Head-Royce's high school students.

Chapman and Land also encouraged faculty members to find personal connections to the green school mission. Some teachers initiated waste-free lunches; others took field trips to a waste management center that proved profoundly eye-opening, revealing just how much waste the community produces every day; still others got deeply engaged in the new garden. One particularly important opportunity revolved around the creation of a book group. Over a summer break, Land asked teachers to read one of four books (*How Much is Enough?* by Alan Durning; *Animal, Vegetable, Miracle* by Barbara Kingsolver; *Field Notes from a Catastrophe* by Elizabeth Kolbert; or *The Omnivore's Dilemma* by Michael Pollan) and then meet to discuss them according to their interests. (cont’d on p. 10)
"This allowed teachers to connect with one of the four tenets pretty meaningfully — to come to a place of seeing, 'Oh, this relates to my life,'" says Land. "It's not just what we are doing as a school but also as individuals. There is great power in that."

Having come this far in a relatively short period of time, some schools would be more than willing to stop and declare themselves a model green school. But at Head-Royce, being a green school also meant greening the curriculum and considering: What would a green graduate look like? This was new territory for Chapman, as it would be for many educators. But when he stopped in a bookstore in Point Reyes, California, and mentioned what he was thinking about, the seller handed him a book and said: "Why don't you look at this?"

The book was Ecological Literacy: Educating Our Children for a Sustainable World, developed and edited by the Center for Ecoliteracy. As Chapman read it, he found that one essay in particular — "Speaking Nature's Language: Principles for Sustainability," by Fritjof Capra, cofounder of the Center for Ecoliteracy and systems thinker — provided a framework that was crystal clear.

In this essay, Capra explains that in order to design sustainable societies, we must first embrace a new way of seeing the world that, in many ways, runs counter to traditional Western science and education. This way of thinking, known as systems thinking, emphasizes the qualities of relationships, connectedness, and context — in any system, whether an ecosystem or a school system.

Once these perceptual shifts are made, Capra explains, one can then begin to study sustainability in the language of nature — through eight particularly important concepts that describe the patterns and processes by which nature sustains life: networks, nested systems, interdependence, diversity, cycles, flows, development, and dynamic balance.

"These concepts, the starting point for designing sustainable communities, may be called principles of ecology, principles of sustainability, principles of community, or even the basic facts of life," writes Capra. "We need curricula that teach our children these fundamental facts of life."

With Capra’s essay in hand, Chapman and Land met with the school’s 20 department heads and proposed that the Center for Ecoliteracy’s principles be applied throughout the K–12 curriculum. Normally, the approval of curriculum changes take about a year. In this case, the committee approved the application of these principles at that first meeting.

To turn those principles into practice, Head-Royce turned directly to the Center for Ecoliteracy in nearby Berkeley, and invited Capra and cofounder-executive director Zenobia Barlow to address the faculty.

"Having the Center for Ecoliteracy come in provided a breath of fresh air, a bigger world perspective," says Land. "This wasn't just about Head-Royce anymore, and we weren't in it alone. It added legitimacy to why we were doing this and showed that it was not just a fad, but a real grassroots movement."

The next step was to conduct a curriculum audit and develop relevant learning activities. For this, the Center for Ecoliteracy sent in Carolie Sly, its director of education programs. A former public school teacher, university professor, and coauthor of the award-winning California State Environmental Education Guide, Sly takes a collegial approach to working with schools. She began by reviewing Head-Royce's curriculum maps to identify positive starting points — areas where teachers were already teaching concepts related to sustainability, and where there was the potential for principles to be easily integrated with lessons already being taught.

"Carolie pulled out from every grade level examples of where sustainability education was already happening; for instance, she showed where we already had lessons in nested systems [the concept that systems are contained within other systems throughout nature]," says Land. "This made it seem like it didn't all have to be such a big deal. No teacher felt that he or she had to go back and trash their American lit course and make it all about Thoreau." To the contrary, Sly emphasized that schooling for sustainability is an opportunity to look at existing subjects through another lens, and that there are numerous ways to incorporate the principles of ecology or sustainability into all subjects.

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"Next, we identified easy access points where we could tweak the curriculum as the train was moving full speed ahead, so to speak," says Sly. During a unit in first grade science on sandy and rocky shores, for example, teachers added a model beach and caused an oil spill. "The students could see with their own eyes what happens to the oil and how difficult it is to clean up," says science teacher Debra Harper. "We then brainstormed ways they could reduce the amount of oil they use in their own lives." Oil drilling and spills would then make more sense to them, she adds, because they would have had a personal experience with an "accident" themselves.

Finally, each teacher took on the larger goal of identifying three to five ways he or she could further promote sustainability in future lessons, as Sly assisted them in developing new units, modules, and, in some cases, courses. In the process, they proved that sustainability could be integrated — not just in the more obvious subjects, such as science, but also in math, literature, history, ethics, world languages, and art.

In a high school ethics class, for example, Karen Bradley took her students on a field trip to the Davis Street Transfer Station so they could experience what it feels like to be dwarfed by the mountains of trash produced daily in their community. She later shared her own personal commitment to not buy any new clothes for a year, then challenged them with the question: "What would you be willing to give up to make your consumption on par with people in the rest of the world?"

In art classes, students made sculptures out of discarded construction materials and worked on a mural about growing food in a low-income area of East Oakland. And, under the direction of elementary school teacher Nina Nathan, they collected paper from recycling bins all over campus, shredded it, and made pulp. They then produced handcrafted paper, which they turned into a beautiful paper quilt.

In the process, students learned more than how to make paper. Says Nathan: "They learned that you can take pieces that would otherwise be considered junk and make something beautiful out of them — something that makes people happy and lifts their spirits."

As with art and ethics, so throughout the curriculum at every grade level, Head-Royce pioneered its way into schooling for sustainability. And yet, says assistant head and academic dean Land, Head-Royce teachers still see themselves as having only just begun.

"I think we feel as if we now have Fritjof [Capra's] systems thinking in our brains now," says Land. "We see more of the complexity of what we're doing, and we recognize that we've barely just opened the door."

It will probably take three to five more years for Head-Royce to realize their aspirations in schooling about sustainability, she says. And during that time, there will be periods of messiness, challenges, and questions.

"Some say, 'How is this going to work with an AP-driven curriculum? Are we going to lose valuable pieces of knowledge?'" says Land. "I certainly don't think so, but we need to be intentional about how we continue to integrate ecoliteracy with college prep."

Looking back, she says that one of the most striking things about the experience they have had so far is what it says about the things that make big changes possible.

"To me, the biggest lesson we learned is that when people have a personal connection to something, they are much more invested in seeing change happen," she says. "This is not about what I did or what Paul [Chapman] or Al Gore did. This is about something that speaks to people — kids, teachers, parents, builders, maintenance staff — deeply and personally."

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APRIL
22 Earth Day - www.earthday.net/earthday2010
23 World Book and Copyright Day - www.unesco.org/culture/bookday/
30 Arbor Day - www.arborday.org/kids/postercontest/activities.cfm

MAY
1 International Workers Day (May Day) - www.maydayusa.org/
4 National Teacher Day - www.nea.org/grants/1359.htm
17 World Information Society Day - www.itu.int/wtisd/
31 World No-Tobacco Day - www.who.int/tobacco/en/index.html

JUNE
1 Stand for Children Day - www.stand.org/Page.aspx?pid=2654
4 International Day of Innocent Children Victims of Aggression - www.un.org/events/childvictimday
5 World Environment Day - www.unep.org/wed/index.asp
26 International Day in Support of Victims of Torture - www.un.org/events/torture

JULY
11 World Population Day - www.unfpa.org/public/world-population-day