Reusable School News

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD SPRING 1994

Reusable School News (the News) is published by the California Integrated Waste Management Board (CIWMB), the agency responsible for overseeing the development and implementation of a statewide integrated waste management program. CIWMB provides technical assistance and resource information to school districts in developing waste prevention and recycling programs. The News highlights case studies showcasing the economic and environmental benefits of establishing a district-wide waste reduction program. It is being sent to local governments, school districts, schools and other interested parties. For more information, call the Schools Section at (916) 255-2385.

Compost Education Center

The San Francisco League of Urban Gardeners (SLUG) is a non-profit organization that offers workshops on composting and gardening. Field trips and support for school and community garden projects can be arranged for a fee. The Compost Education Center at SLUG's Garden for the Environment, located at 7th Avenue and Lawton Street, demonstrates various methods of composting. The Garden is open to the public and a SLUG staff member will be available to answer your questions. For more information, call Carl Grimm at (415) 285-7584.

A Hands-on Approach

Riverdale Middle School, Fresno County, involves students inside and outside the classroom. A team of teachers developed a two week unit on vermicomposting—composting with red worms. The unit, based upon an interdisciplinary approach, emphasizes students participating in hands-on activities. Inside the classroom, students study the worms' physiology and reproductive cycles. Outside student teams are involved in constructing the worm bins, monitoring the worm beds, and measuring the amount of food waste that is diverted. Because everyone is involved with the school's waste management program, there is an overwhelming sense of pride and accomplishment. For tours or more information, call Louise Dwiggins (209) 867-3589.

Vermicomposting In The Classroom

What Is Worm Composting?

Let worms recycle for you and your students. They will quickly turn food scraps into an exceptionally rich fertilizer for your classroom plants or school garden. Worm composting is not only easy, but it is also an engaging hands-on educational activity for your students. Your students feed the worms food scraps such as banana peels, wilted lettuce or stale bread and the worms do the rest. Worm composting, also called vermicomposting, can be done year round. It's ideal for small spaces inside or outside the classroom.

Worms In The Classroom?

With proper care, your worm box will have a pleasant odor, like that of fresh earth dug out of the ground.

Worms Save Money!

Your class's worms help the environment by reducing the amount of garbage you produce. A medium-sized worm box can process as much as 1-5 lbs of food waste each week! In return, you get a valuable soil amendment good for growing just about anything, and your school can realize dollar savings in reduced trash collection costs!

Beyond trash savings, your school can sell worms to local gardeners, bait shops, schools, etc. A local bait shop has contracted with Cinnabar Elementary School, Sonoma County, to purchase all of the school's extra worms. Selling worms provides students with an opportunity to set up a business, which includes developing budgeting and marketing skills.

Getting A Worm Bin Started

Eisenia foetida, also known as red worms or red wrigglers, are the best worms for worm composting. Red worms are a different species from common garden worms and night crawlers, which need large amounts of soil and cool temperatures to survive. One pound of red worms (about 1000 worms) is enough to start a worm bin. Get your worms from a friend's bin, or buy them from a worm farm or bait shop. Once your class's worm bin is established, you will have enough worms to help others start vermicomposting too.

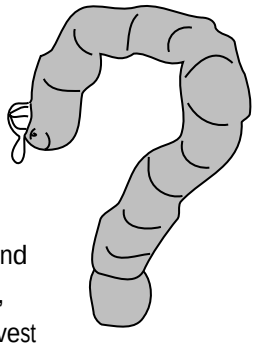
Where Will Our Worms Live?

Building a worm bin is a great activity that the entire class can participate in. You may already have in your classroom what you need to make a worm bin. A plastic storage container, waste basin, or a sturdy wooden box can be easily fashioned into a home for your worms. Or you can buy a bin specially designed for worms. Whatever you use, your worm box should be shallow, since worms like to live near the surface where they can breathe. About one foot deep with two to three square feet of surface area is best. Your bin should also have a tight fitting lid and holes drilled in the bottom for ventilation and drainage.

Eight or ten inches of bedding inside your bin will provide the worms with a damp, aerated place to live. Common bedding materials include strips of newspaper, shredded cardboard, manure, leaves, or peat moss. Moisten the bedding and squeeze out excess water before placing it inside the bin. Adding a handful or two of soil will provide grit which will help the worms digest food particles.

What Can The Worms Eat?

Worms will eat fruit and vegetable peelings, coffee grounds, tea bags, crushed egg shells, bread, and rice. To prevent odors do not feed worms meat scraps or dairy products. Once a week have students bury food scraps in the bedding to discourage molds and fruit flies. Bury the food in a different corner of the box at each feeding. The next time you look, it should be gone. If not, try feeding the worms a little less for a while.



When Do We Get Fertilizer?

After a few months, you will notice that the original bedding has disappeared and has been replaced with rich, dark worm compost. It's harvest time. Put the worms on a diet. In a few days, have students either separate the worms from the compost by hand, and start anew with fresh bedding, or try the following: coax the worms to one side of the box by feeding only on that side for a few weeks. Then harvest the worm-free side of the box, replace it with fresh bedding, and start over again.

For more information about worm composting and teacher activities/curricula, contact the Schools Section, CIWMB, (916) 255-2296.

Everyone's Involved

Custodians initiated Sierra Elementary school's (El Dorado County) waste reduction program. Through reuse, recycling and composting, the school has reduced garbage by 50 percent! By reducing waste, Sierra is reducing disposal costs, realizing environmental and economic benefits from their efforts. How did they do it? Custodians actively involve the students and staff. The "Golden Apple Core Award" is bestowed on the outstanding waste reduction participants for the month. This award has become an embellished honor, as everyone tries to make a contribution to the success of the program. In addition, the custodians reward exemplary efforts by distributing "pieces of ate" (Jolly Rancher candy).

Students organized an "Earth Savers" club. The club is responsible for monitoring cafeteria recycling, collecting recyclables, motivating students and staff, and identifying innovative solutions to deal with Sierra's waste. For example, while "Earth Savers" were monitoring cafeteria recycling, they noticed unused, unopened food; e.g. fruit and chips, were being thrown away. The solution: intercept the food before it hit the trash can. Some food is washed and distributed the next day during lunch to those who do not bring lunch or are just extra hungry. The majority of the leftover food is donated to a local food kitchen.

Food which cannot be reused is given to the worms. The custodians built a large compost bin, made from used wood, and inoculated the compost pile with red worms, which love food waste. The worms were purchased with aluminum can recycling funds. The bin is located behind a storage room. Students and staff are responsible for monitoring the compost and ensuring the worms do not go hungry. Contact Jack Brabrook or Tanya Boolootian at (916) 622-0814.

Hints to Handle Household Hazardous Waste (HHW) - Unwanted Pesticides

Many of us generate hazardous waste in our homes simply by cleaning, gardening, repairing or enjoying a hobby. A waste may be considered hazardous if it exhibits one or more of the following properties: corrosive, flammable, irritant, reactive, or toxic. If a product displays "Caution", "Warning", or "Danger" on its label, it is probably hazardous. It is important for parents and teachers to educate young people about proper handling and disposal of these materials.

Many pesticides exhibit toxic and/or irritant characteristics and must be used and disposed carefully to avoid health and environmental hazards.

Unwanted Pesticides *(Continued)*

Here are some tips for safely handling pesticides:

Carefully assess the amount of pesticide you need, and buy only that amount.

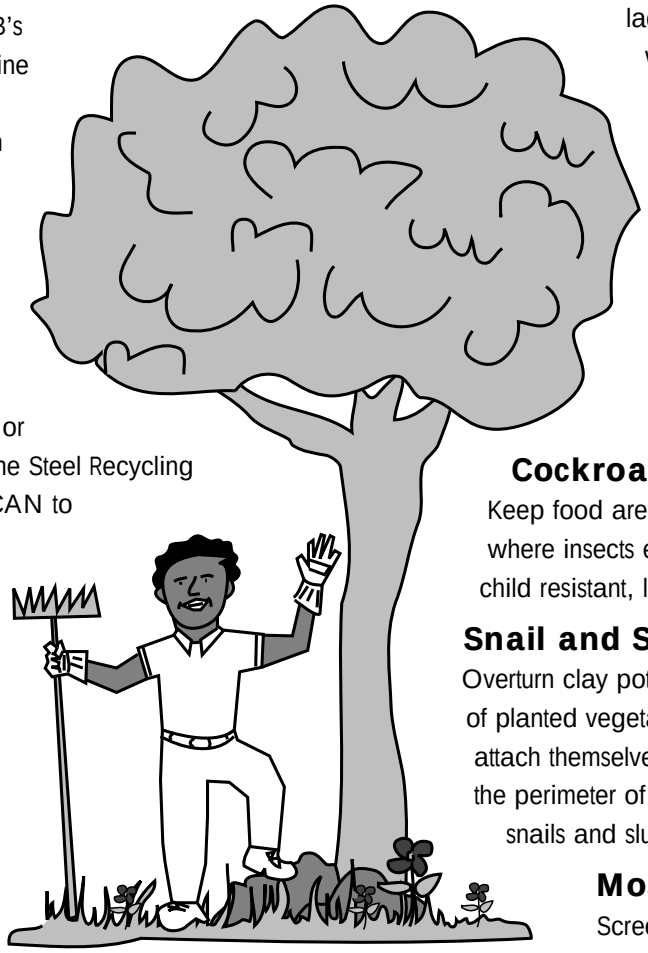
Follow all label directions carefully.

Try to find a charitable organization or friend to use leftover pesticides. Try a school.

If you have pesticides that you cannot donate, or if the nozzle is broken on a full or partially full aerosol container, take it to a HHW Collection Event or Facility. Contact your local HHW Coordinator or CIWMB's Waste Information Hotline at (800) 553-2962 for any available centers in your area.

Empty aerosol containers (no product emits when nozzle is depressed) may be recycled. Contact your Recycling or HHW Coordinator or the Steel Recycling Institute at (800)YES-I-CAN to determine if recycling opportunities exist in your area.

If you wish to explore alternative practices instead of using chemical pesticides, try these:



Fertilizers

Compost, peat moss, fish meal, and chicken or turkey manure are effective alternatives. Avoid fertilizers that contain pesticides.

Fungicides

Avoid over-watering and keep garden growing areas clean. Water in early morning hours.

Herbicides

Pull or hoe weeds; mow grass to two inches. Use mulch and woven "weed blankets." Remove weeds before they begin to flower and produce seeds.

Insecticides

Apply organic gardening techniques; keep garden clean and weed free; import predators (such as ladybeetles, ground beetles, green lacewings or praying mantis) that will feed on specific pests. Use natural pesticides such as Bacillus thuringiensis (B.t.) to kill caterpillars.

Pet Products (Flea Control)

Comb pets regularly with a fine-toothed flea comb. Vacuum carpets and pet bedding regularly.

Cockroach and Ant Killers

Keep food areas clean; caulk or fill openings where insects enter home or hide. Look for child resistant, less-toxic bait stations.

Snail and Slug Poisons

Overturn clay pots or lay boards between rows of planted vegetables and collect snails that attach themselves. Use copper strips around the perimeter of plants as a barrier against snails and slugs.

Mosquito Repellent

Screen windows. Keep roof gutters clean. Eliminate standing water. Burn citronella candles. Get mosquito fish and bacillus thuringiensis israelensis (B.t.i.) for ponds.

Laytonville Composts

Putting worms to work has made vermicomposting (composting with worms) successful at Laytonville Unified School District in Mendocino County. In 1993 14,000 pounds of waste was reduced by their recycling and composting efforts, translating into significant disposal cost savings for the district. Students from the district's elementary and middle school separate their lunch waste into non-protein "worm food" (i.e. no meat or dairy products), paper bags, aluminum cans, glass, milk cartons and garbage. Both the worm food and paper bags (after being shredded) are taken to the worm bins located in the school garden.

Under adult supervision, middle school students monitor the bins and record the worms' activities. Students also built four 32-square foot worm bins last spring out of redwood and plywood. A chart showing the amount of compost produced is posted in the cafeteria; the compost and recycling program has reduced school garbage by 60-80 percent. For more information contact teacher Binet Payne, Laytonville Elementary (707) 984-6123, ext. 36. For information on setting up a composting program, contact Cara Morgan, CIWMB, (916) 255-2447.

A Real Party Animal!

The fifth graders at the Washington Elementary School in Pomona had a worm party to celebrate the addition of vermicomposting to their expanding waste prevention and recycling program. The school discovered that worms are great party animals. The Mayor of Pomona, the Pomona City Recycling Coordinator, and the California State Polytechnic University Landlab Recycling Coordinator attended the party.

The worm party invitations were in the shape of worms and made from discarded gift boxes received from Nordstrom's Department Stores. The envelopes were made from recovered computer paper. Dirt cake (chocolate pudding cake) was served. Worms made from empty toilet paper rolls on strings dangled from the ceiling. The party was a great success!!

The worm bin is kept in the classroom. The children are feeding the worms coffee grounds and leftover food from their lunches and snacks. Landlab will be donating worm bins to the school as their vermicomposting program expands.

As part of their continuing commitment to teaching waste prevention and recycling, they are very enthusiastic about the worm program.

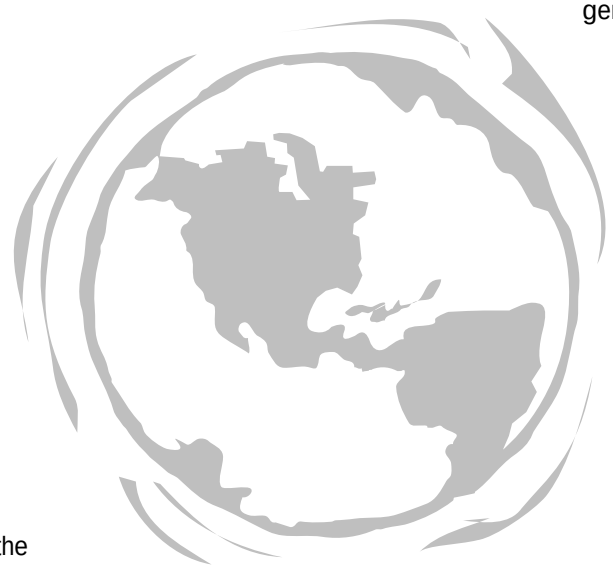
For more information about this school project, please contact Mrs. Martinez, fifth grade teacher, at (909) 397-4675 or Marcia Iannone, Cal Poly Landlab Recycling Coordinator, at (714) 869-4449.

Lancaster Gets A Lot Of Mileage Out Of Waste Tires

Californians generate some 28 million waste tires each year. Placed side-by-side, that's enough to stretch from here to Japan and back. The City of Lancaster has found a solution for reusing a portion of these tires. Through a grant from the California Integrated Waste Management Board, the city is assembling compost bins made from old tires. Specially designed machinery punches out tire pieces which are connected together to make sturdy vandal-resistant compost bins. Each bin requires three to four tires.

Ray Olson, Lancaster Recycling Coordinator, said the plan is to make 1,800 compost bins out of used tires. A majority of the bins will be donated to schools. Prior to distributing the bins, the city plans to conduct composting workshops for teachers. At the workshops the teachers will be given a compost bin and educational materials to take back to their school.

The project is centered around maximizing student participation at each of the city's schools. At each school the students will be responsible for maintaining the compost sites. The students' assignments will consist of watering, turning, aerating, and adding raw materials to the compost bins. The students will learn to compost appropriate items left over from their lunches including apple cores, banana peels, lettuce, and other vegetable matter. Maintenance staff will also deposit grass clippings and leaves in the bins as needed.



Composting food and green wastes at school significantly reduces waste normally disposed in landfills. By diverting these wastes from trash containers, schools can realize significant savings through reduced collection costs. Thus, schools can help the environment and save money at the same time!

It is hoped that through the students' involvement in composting at school, they will encourage their families to compost at home. In reaching families, the city will periodically send information home with students about the city's Community Compost Education Program. For details about this program contact Ray Olson, (805) 723-6000.

Reusable Pizza Boxes? Why Not!

We KARE Enterprises, based in Minnesota, has developed and produced an innovative product that could potentially eliminate the estimated one and one-half billion pounds of waste generated annually from cardboard pizza delivery boxes. Called "Boomerang Boxes™", these returnable and reusable pizza boxes are made of plastic and can be cleaned and sterilized with existing equipment in pizza establishments. Ideal for ordering and exchanging during pickup or delivery, the Boomerang Boxes™ are also great for institutions, such as schools.

Boomerang Boxes™ are available to all independent pizza operators and chains nationwide. A patent is pending. For more information, contact Rick Herzog, owner of We KARE Enterprises, at 800-453-6207.

Downey Saves Money!

During the first year, a comprehensive recycling program netted Downey Unified School District $10,000 in refuse collection savings. The creator of this successful program is Jean Hardy, Director of Purchasing and Warehousing.

Hardy's first step was to bring together all of the key players to develop a plan for the district. The players included City of Downey's recycling coordinator; CALSAN Refuse Company (the district's refuse company); Western Pacific Pulp and Paper Company; Keep Downey Beautiful coordinator; and the district's assistant to the director of Maintenance, Operations and Transportation.

This team developed a recycling program for the district entailing separating garbage from food service foam trays and Sporkettes (polystyrene utensils), mixed paper, white paper, cardboard, and green waste (grass, leaves, and tree/hedge clippings).

Hardy got the program rolling by meeting with school principals and staff to receive their input and to assist them in implementing the program. District office staff also received training prior to the program's kick-off.

Pulling these materials from the waste stream enabled the district to modify the trash collection service and receive revenue from the sale of the recyclable products.

Hardy did not stop here, however. She also sought donations to assist the program:

Three-yard bins to store cardboard and other products picked up by warehouse staff – donated by Western Pacific Pulp and Paper Company.

Plastic waste baskets for all district classrooms and offices for collection of paper products – donated by the City of Downey.

$500 for the purchase of locks for all three-yard dumpsters to prevent theft and contamination – donated by Soroptimist International of Downey (Hardy is a member).

Support from all of these groups, as well as the district administration, staff, and students, has enabled Hardy to pull together an environmentally beneficial and cost-effective program. For details contact Jean Hardy at (310) 904-3500.

Have You Ordered Your How-to Guides?

Over the past year the California Integrated Waste Management Board has spent a great deal of time assisting school districts and local governments in implementing waste prevention and recycling programs. Based upon the results of these projects and other existing model programs, the Board has developed two How-To Guides, which will be available in April, 1994.

The first guide, *Seeing Green Though Waste Prevention*, provides extensive information for developing a district-wide waste prevention program. Waste prevention saves resources by encouraging more efficient use of materials; and it reduces pollution associated with extracting raw materials, manufacturing excess items, and disposing waste. By including a waste prevention program in the district's resource conservation plan, you can help the environment and cut costs simultaneously. This guide outlines steps, such as waste composition surveys, waste prevention ideas/activities, and cost analysis, you will need to undertake in establishing a comprehensive program.

The second guide, *A District-Wide Approach To Recycling*, supplies detailed information necessary for implementing a recycling program covering the entire district. The data in this guide is supplemented with case studies based on other districts' experiences. The guide focuses on the economic benefits of a district-wide program. Topics covered include, organizing key players, securing hauling arrangements, and training staff and students.

These guides are available at no charge.
To receive a copy, contact Schools Section, (916) 255-2296.

Economic Incentives for School Districts

The California Integrated Waste Management Board (CIWMB) is now paying a $0.16 per gallon recycling incentive for used oil which is recycled. As a school district or school you may be eligible to participate in this incentive program. To qualify you must meet the following criteria:

You buy and use lubricating oil for equipment, such as vehicles, lawn mowers, which you own; and

you have this used oil transferred to a certified used oil recycling center.

To receive additional information and an application to register in the program, contact the CIWMB Used Oil Program, 8800 Cal Center Drive, Sacramento, CA., 95826, or call (916) 255-2891.

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