



School District of Palm Beach County

Educating the Green Generation: Build Green. Learn Green. Live Green.

Energy Efficiency a Top Priority

Go Green at School

- Pack a waste free lunch
- Walk or ride a bike to school
- Use both sides of the paper
- Use crayons and colored pencils instead of markers
- Use refillable pens instead of disposables
- Turn off the lights when you leave the room and your computer when you leave for the day



Maximum energy savings can be realized through a combination of technical controls and changes in user behavior

The School District of Palm Beach County is one of the area's largest consumers of electricity. With approximately 186 schools and many other support facilities, the demand for energy to run the air conditioning, lighting, and refrigeration systems is high. As such, the need to control energy consumption, and its related costs, is great.

According to Energy & Utility Manager, Lee Kapp, who has been managing the District's utilities for over 20 years, the District has reduced its energy consumption, despite the addition of square footage, by over 12 percent the past 2 years by implementing a series of technical controls and by encouraging changes in user behavior.

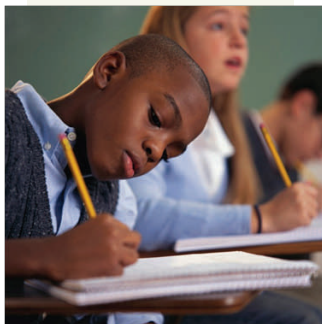
How does the District control energy use and associated costs?

The District's most powerful tool for controlling energy usage is its energy management system (EMS). EMS is a computer-based system used to control and maintain temperature, comfort, lights and equipment monitoring throughout the District. EMS technicians input schedules to reduce equipment run-times and custodians "team clean" to allow portions of the school to be shut down early.

What can schools do to save energy?

Efficient energy use is EVERYONE'S responsibility. All occupants of District facilities are expected to do what they can to ensure that energy resources are used wisely. That means turning off the lights, shutting down computers (CPUs **and** monitors!), projectors, and other equipment when they are not in use, and using natural daylight whenever feasible.

Spotlight on Morikami Park Elementary



Morikami Park Elementary is located in Delray Beach, Florida, and is a magnet school offering the International Baccalaureate Primary Years Program. As part of the program, students study environmental concepts, create projects, and are encouraged to take environmental action within their community.

Despite the program's focus, the school was not actively engaged in any tangible examples of green living. For example, 3rd graders studied the message of "Reduce, Reuse, Recycle" yet did not have recycling opportunities in the cafeteria. Kindergarteners studied life changes of butterflies, yet the school's butterfly garden was overgrown with weeds.

Then, in 2008, things began to change.

With the support of a new principal, Renee Elfe, PTA president Jamie Garroway, and the creation of a new position within the PTA (the "Green Chairperson"), what would become an award-winning green schools campaign was begun. In 2009 and again in 2010, Morikami received the title "Green School of Excellence" by the PBC Green School Recognition Program. The school also received a 2009-10 "Friends of the Environment" award from Florida PTA.

What are the keys to their success?

According to Cindy Papadoyianis, the school's Green Chairperson, "The key to our success is strong PTA involvement, coupled with contributions from our Afterschool Program Director and some very special green-minded teachers."

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Teaching the 3 Rs

Commercial entities, including schools, in Palm Beach County are estimated to generate approximately 5 pounds of trash per person per day. There is a tremendous cost to both society and the environment to collect and dispose of this waste material. In fact, our School District spends over FOUR MILLION dollars per year on waste collection and disposal! In addition, our waste contributes to the growing problem of quickly-filling landfills. So, the less we throw away and the more we recycle, the lower our solid waste hauling and disposal costs will be. This can lead to significant savings for the entire district and, of course, significant benefits to the environment.

To address our garbage problem, the District has adopted strategies that encourage the waste management hierarchy of REDUCE, REUSE, RECYCLE. So, what does that really mean?

- ◆ The first and most important step is to **reduce** the amount of solid waste you generate
- ◆ Second, try to **reuse** materials for the purpose for which it was originally intended or in another way that prevents it from becoming waste
- ◆ Lastly, **recycle** any material that cannot be reused.

To emphasize the importance of implementing the 3 R's, the District passed a mandatory waste reduction and reduction policy in 2009. The policy applies to all schools and administrative facilities and requires that everyone recycles, at a minimum, paper, cardboard, and mixed plastic, glass, and aluminum. The policy also encourages the collection of electronic waste, ink and toner cartridges, and other recyclables. During the 2009-2010 school year, the District saved over \$500,000 in landfill fees through its recycling efforts. Now that's a green way to save some green!

Go Green at Home

Vinegar and baking soda are just some basic cleaners you can find in your home. Have you heard of using lemon juice or salt to clean?

- To clean out the hard water build-ups in coffee makers, irons and washing machines add vinegar and run a regular cycle.
- To eliminate bad odors in the garbage can, sprinkle baking soda on the bottom before you add a clean bag.
- Mix lemon juice and water to clean mirrors and windows.
- Use salt to clean a wooden cutting board.

Green Facts and Figures

- Every ton of paper recycled saves more than 3.3 cubic yards of landfill space.
- Scrap metal makes up one of the two largest exports that the U.S. sends to China.
- The Environmental Defense Fund estimates that if every American substituted a vegetarian dish for a meat dish for just one meal per week, the carbon dioxide reduction would be roughly equivalent to taking more than one-half million cars off the roads.
- If just 25% of U.S. families used 10 fewer plastic bags a month, we would save over 2.5 BILLION bags a year.
- Recycling just one aluminum can saves enough energy to operate a TV for 3 hours.
- Telephone books make up almost 10 percent of waste at dump sites. Recycle them, or better yet, call to stop phone book delivery and then use an online telephone directory instead.
- The refrigerator is the biggest energy-consuming kitchen appliance. The amount of energy saved in a year by using a more efficient refrigerator usage is enough to light every house in the United States for more than 4.5 months!



School District A Strong Supporter of LEED and Green Building



In March 2008, the School Board of Palm Beach County voted unanimously to design and construct all future schools to conform to the LEED rating system, as developed by the United States Green Building Council (USGBC). "LEED" stands for Leadership in Energy and Environmental Design and is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Certification of a building by the USGBC is predicated on the achievement of certain credits and points within those credits. The District's Building Department introduced new LEED-influenced specifications and design guidelines in 2009 to support its decision to "build green."

Since the *LEED for Schools* rating system allows a number of different ways to achieve points, the District had to determine, early on, what points would and would not be pursued in the certification process. For example, while the District prefers to use materials that have no or low volatile organic compounds (VOCs), it does not increase ventilation beyond building code requirements as this increases utility costs and could result in mold growth.





The Palm Beach County Green Schools Recognition Program

The Green Schools Recognition Program (GSRP) celebrated its 2nd year in Palm Beach County. The program serves to encourage cultures of sustainability within school communities and recognizes K-12 public and private schools that have made strides in:

- Using the outdoors as a learning environment and enhancing the ecological integrity of those areas
- Demonstrating the conservation of energy and water, and promoting the reduction of solid waste generation
- Integrating curriculum that will prepare students to understand and act on current and future environmental challenges facing South Florida
- Promoting community involvement and fostering an awareness of local environmental issues
- Providing professional development and creating a school philosophy and culture that embraces sustainability

The GSRP is an initiative of Florida Atlantic University's Pine Jog Environmental Education Center and is funded by a grant given by the Community Foundation for Palm Beach and Martin Counties. Community sponsors include Solid Waste Authority and Audubon Society of the Everglades. Additional community support comes from area businesses and organizations who participate as judges.

There are three levels of recognition under this program:

- *Program of Excellence*: a school that shows the highest level of commitment to sustainability
- *Program of Quality*: a school that is taking active strides in improving and maintaining sustainable practices
- *Program of Promise*: a school that is taking the beginning steps to improve sustainability

Congratulations to the 2009-2010 Green Schools

<u>Programs of Excellence</u>	<u>Programs of Quality</u>	<u>Programs of Promise</u>
Pine Jog Elementary	Timber Trace Elementary	Alexander W. Dreyfoos School of the Arts
Roosevelt Middle	S.D. Spady Elementary	Hillel Day School
Jupiter Farms Elementary	Greenacres Elementary	Park Vista High
St. Mark Catholic School	Clifford O. Taylor/Kirklane Elementary	Poinciana Elementary
Morikami Park Elementary	Jupiter High	Marsh Pointe Elementary
Palm Beach Day Academy	Palm Springs Middle	Citrus Cove Elementary
Jupiter Middle	Unity School	Bak Middle SOA
	Northboro Elementary	Lighthouse Elementary
	Grassy Waters Elementary	Forest Park Elementary
	West Gate Elementary	

LEED *(cont'd from page 2)*

Some of the benefits of building green include energy savings, measurable reduction of waste, decreased water use, and improved indoor air quality. Other benefits are less tangible and harder to demonstrate empirically, but are no less desirable. These include improvements in occupants' health, increased employee morale, productivity, recruitment, employee retention and improved test scores.

LEED certified schools may cost slightly more to construct, but are less expensive to operate. In August 2008, the state's first LEED Gold-certified school, Pine Jog Elementary, opened its doors. The award-winning school, which shares its site with Florida Atlantic University's Pine Jog Environmental Education Center, was the first of several new schools the District designed with LEED in mind. In 2009, the District also opened Hope-Centennial Elementary and Clifford O. Taylor/Kirklane Elementary, both of which are awaiting their LEED certification. In the fall of 2010, the District will open Everglades Elementary, Plumosa School of the Arts, and Northboro Elementary, which are all expected to receive LEED certification.

The District is also pursuing certification for some of its existing schools under the *LEED for Existing Buildings: Operations & Maintenance* rating system.

Energy Star Ratings for School Buildings

The annual energy bill to run America's primary and secondary schools is a staggering \$6 billion — more than is spent on textbooks and computers combined. The least efficient schools use three times more energy than the best energy performers and top performing Energy Star labeled schools cost forty cents per square foot less to operate than the average performers.

The School District of Palm Beach County has begun the process of benchmarking all of its 186 schools' energy performances utilizing the EPA's Energy Star portfolio. Benchmarking energy performance is a key first step to understanding and reducing energy consumption and carbon footprints. It enables building owners to track energy and water consumption, identify under-performing buildings, set priorities, monitor progress, verify improvements, and receive EPA recognition for achievements in energy efficiency. Buildings are compared to others of its type (e.g., elementary schools are compared to other elementary schools) and are then scored on a 100-point scale.

Once the initial data (e.g., building and parking square footage, number of walk-in coolers and computers) is collected, benchmarking is quick and simple. It requires only a few minutes a month and provides many valuable results.





SAVE THE DATE!

The second annual **LEARN GREEN** event will take place on **OCTOBER 15, 2010**, at Palm Beach Central High School in Wellington. This free, all-day event will feature speakers and exhibitors about everything to make your school **GREENER**.

For more information, please visit:

www.ourgreenschools.com

Spotlight on Morikami Park Elementary *(cont'd from page 1)*

What are some of the lessons learned in making the school a greener place of learning?

Teachers have demanding schedules and implementing a green school program, while extremely worthwhile and fulfilling, can be very time consuming. Including parents in the process is one of the best ways to get the job done.

How can parents be recruited?

- Ask your PTA President to send a mass email asking for volunteers (list titles and duties).
- Place sign-up lists in strategic locations during "Meet the Teacher" day or "Orientation" night. Make an announcement that help is needed and that sign-up sheets are available.
- Host a PTA booth during the first week of school that includes volunteer sign-up sheets. Offer parents incentives for volunteering. Be creative.



Students, parents, teachers, administrators, and community members collaborate on a habitat restoration project

Composting: A Global Warming Hero?

One of the biggest misconceptions about global warming is that the only important goal is keeping atmospheric carbon dioxide below 350 parts per million. In the long term, carbon dioxide is, in fact, a big threat, but right now, much of the lowest-hanging fruit is not CO₂ at all.

In the Arctic and Himalayan regions, soot is responsible for most of the warming to date. It comes from bunker oil and diesel fuel used in ships and trucks, from forest fires and household cooking, and from primitive coal-burning plants. Soot is relatively cheap to control; better yet, it washes out after six months, so stopping new emissions would get rid of the problem very fast. As a bonus, it would greatly improve public health, as soot causes one million premature deaths worldwide each year.

Another non-CO₂ greenhouse gas is methane, a major source of which is organic garbage decomposing in landfills.

Good old-fashioned composting could easily solve this problem. San Franciscans are now required to separate out food waste from their garbage, just as they do for glass and paper. It's not that hard!

This fact alone is a compelling reason to keep food waste and organic landscape debris out of our landfills. Many of our schools are educating our youth on the importance of this practice and have begun composting at their sites. As students are actively engaged and see the results, they become the ambassadors carrying environmental stewardship to their homes. Simple composting containers can be found at your local hardware store. Consider some of the added benefits; recycling decomposing organic material into nutrient rich soil is great for plants and when used in place of chemical fertilizers, plants are much healthier and pest resistant.



Palm Beach County students help build a small composter

