

Pillar III: Provide effective environmental and sustainability education, incorporating STEM, civic skills, and green career pathways.

Nominee: The School District of Palm Beach County, Florida



The School District of Palm Beach County’s vision of *“a multicultural community where education and lifelong learning are valued and supported...”* is furthered by its commitment to design and build world-class facilities that incorporate the latest sustainability and conservation concepts. The District has developed and implemented curriculum and choice programs specifically designed to integrate environmental and sustainability topics into the K-12 academic experience. Recognizing that “it takes a village to raise a child”, the District is also committed to community outreach by serving as an active member in various local and national conferences that promote environmental awareness and recognize and reward environmental achievement.

The District provides numerous tools and opportunities for teachers and students to be engaged in environmental education. Grade level appropriate lesson plans which tie environmental education to Florida’s Sunshine State Standards are available to all teachers on the District’s website; Learning Village. There teachers can find lesson plans that relate the environment to math, science, language arts and other subjects.

Environmentally themed and STEM choice and career education programs are also offered to students in elementary, middle and high schools. The following choice programs are available to students through the District’s choice application process:

- **Energy, Environment, and Engineering** – Galaxy Elementary
- **STEM** – Pine Jog Elementary, Poinciana Elementary, Roosevelt Elementary, Boca Raton Community High, Royal Palm Beach community High, Suncoast High, Village Academy
- **Environmental Science & Research** – Roosevelt Community Middle, Forest Hill Community High, Jupiter Community High
- **Engineering & Technology** – Eagles Landing Middle, Congress Middle, Lake Worth Middle, Roosevelt Community Middle, Forest Hill Community High, Glades Central Community High, Jupiter Community High, Olympic Heights Community High, Palm Beach Central High
- **Biotechnology** – Bear Lakes Middle, Palm Beach Lakes Community High, Seminole Ridge Community High, Spanish River Community High

Highlights of Jupiter Community High School:

- At the high school level, Jupiter Community High School's competitive 4-year magnet program JERFSA (Jupiter Environmental Research and Field Studies Academy) provides a rigorous environmental studies program as an integral part of its curriculum. Students are immersed in studies ranging from ecological systems and natural processes to environmental awareness that spans high school and collegiate instructional levels.
- Following its 1993 inception, JERFSA graduated 35 students. The Academy has expended greatly and now currently offers 75 field activities in collaboration with local wildlife and environmental conservation agencies and other community partners. High school students routinely visit elementary schools for presentation of environmental issues and literature to students and staff. The academy currently accepts up to 60 incoming freshmen, with an estimated 200 in the program-at-large. JERFSA students host and participate in a yearly 5-K Green Run/Walk to showcase a local wetland preserve (Palm Beach County - Riverbend Park – Jupiter, Florida) and increase community awareness of natural resource conservation.
- In 2012 JERFSA won the Florida Envirothon competition for an unprecedented sixth time defeating all 26 of Florida's district champion teams. This competition requires teams to demonstrate their mastery of environmental areas of study including Aquatic Ecology, Forestry, Soils/Land Use, Wildlife, and Current Environmental Issues.

Highlights of Galaxy Elementary School:

- The District's "*school as a teaching tool*" philosophy continues to be reflected in new construction projects as exemplified by Galaxy Elementary; an energy, environment, and engineering choice school. Galaxy, currently under construction, is projected to become the 1st LEED Platinum-certified public school in Florida. Built to accommodate 960 K-5 students, the school will merge state-of-the-art building technology with a science-based curriculum.
- As a direct result of community involvement and sponsorship by various local partners including, but not limited to, the Bachelor Foundation and Quantum Foundation, which donated \$750,000, Galaxy Elementary will feature a "wonderment center" featuring a two story museum-like entry, four skills-laboratory classrooms intended to showcase student STEM projects and green initiatives, with sensory based science and nature exhibits at various multi-age work stations.
- The local utility company, Florida Power and Light, has donated solar photovoltaic panels to the school. The physical education pavilion will feature four types of panels positioned so that the elementary students can see them and learn how they function, generate energy, and conduct evaluations of each panel type. The District's Energy Management System will control interior comfort parameters and hallway-mounted computer screens that will allow students to monitor the school's mechanical systems and energy performance data in real-time.
- Galaxy's inter-local agreement with the City of Boynton Beach includes the establishment of a preservation area featuring Florida native flora and fauna with walking paths for outdoor student learning and community enjoyment.
- Additional environmental conservation measures at Galaxy Elementary will include a green roof, a thermal storage ice plant for the HVAC system and enhanced water conservation efforts that include reclaimed water use for irrigation, thereby minimizing the school's water consumption and its reliance on well water from the local aquifer. A wind turbine will be erected to demonstrate the use of wind power in energy production. Rainwater harvesting to

onsite cisterns will aide in greenscape irrigation. High efficiency lighting fixtures, lighting controls, and the optimal use of natural daylight will reduce the school's lighting loads.

Highlights of Pine Jog Elementary School:

- Pine Jog Elementary School, the 1st LEED Gold-certified K-12 school in Florida, has garnered national recognition for its innovate environmental and sustainability practices and unique academic approach to learning. Pine Jog also has a unique after-care program facilitated by Florida Atlantic University (FAU) students that attend the adjoining FAU/Pine Jog Environmental Center. The staff and student interactions are often science-based and expand instructional practices beyond the building walls and into the surrounding 150 acre nature preserve. The school's hydroponic gardening system has become a District model and provides valuable lessons and experience with crop cultivation and agricultural water-use.
- The students at Pine Jog Elementary and the six other LEED or FBGC-certified District schools learn environmental stewardship concepts including the importance of water conservation from hands-on interaction with unique design features including rainwater cisterns, pervious parking systems, bio-swales, low-flow plumbing fixtures and waterless urinals.

Educating District staff and others is also accomplished through the District's extensive green schools website and through the publication of a newsletter, *Recycling Matters*. Through these easily accessible resources, teachers, students and parents can learn more about energy, water conservation, and recycling as well as view live energy and water use data for four of our LEED certified schools.

The District's commitment to environmental stewardship and community outreach and engagement also includes participation in programs and conferences developed with local partners such as its Annual Learn Green Conference and EXPO, the Green Schools Recognition Program, and the Green Schools National Conference.

- The Annual Learn Green Conference and EXPO is a collaborative effort with the FAU/Pine Jog Environmental Center which aims to educate the community-at-large (students, teachers, administrators, facilities professionals, parents, and community members), share knowledge and resources, and foster green initiatives and solutions at school, home, work, and community. The conference attracts attendees from all across the region and includes prestigious keynote speakers. This conference started modestly in 2009 with 300 participants and 30 exhibitors and has grown steadily each year topping 933 participants representing 16 Florida counties and 3 states, while showcasing 90 exhibitors. The 72 sessions of the 4th Annual Learn Green Conference and EXPO conference (October 19, 2012) included such topics as: Creatively Integrating School Gardens and Outdoor Learning Across Curricula, Greening Existing Schools Project Management Guide, 7 Steps to Special Event Recycling, Healthy Eating Through the Ages, Joint Use Interlocal Agreements – Putting the Idea into Practice, UF/IFAS Cooperative Extension – Florida Friendly Resources that Can Support Your School's Green Learning Initiatives, and Sustainable Fleet – The Clean Cities Program and Strategies for Petroleum Reduction.
- The Green Schools Recognition Program (GSRP) is a regional initiative recognizing both public and private schools for sustainability and conservation measures. GSRP encourages integration of sustainable measures into the school curriculum, operations, and community involvement with required administrative support. The program provides cash rewards in six categories, including School Grounds Enhancement (for the use of the school property as an outdoor classroom and for natural habitat restoration), School

Sustainability (focusing on energy/natural resource conservation), Curriculum Integration (including the study of current global environmental issues), Community Involvement (volunteers, interlocal agreements and outreach events), Administrative Support (to build a green school culture), and Innovation (the opportunity for recognition of innovative sustainability measures). Based on their accumulated points, schools are recognized as a Green School of Excellence, Green School of Quality, or Green School of Promise. The Green Schools Recognition Program started in 2009 with twenty-one schools receiving recognition. In 2012, sixty schools were recognized, including 16 - Green Schools of Excellence, 25 - Green Schools of Quality, and 19 - Green Schools of Promise. GSRP is a significant contribution to the local community and has served as a model for similar programs developed in Florida and other states.

- The Minnesota based Green Schools National Network (GSNN), which aims to advance the national green schools movement, is hosting its Green Schools National Conference in Palm Beach County in part because of the District's forward focused environmental conservation initiatives and community engagement. The 3rd Annual Green Schools National Conference (February 22-24, 2013) will be attended by hundreds of participants from across the nation and will include excursions to the Florida Everglades, local beaches, natural areas, and subtropical habitats of South Florida. An excursion to Green Cay Farm is also scheduled to learn about sustainable agriculture, as well as tour of LEED Gold-certified Pine Jog Elementary School and its innovate design features. The conference workshops will feature lectures, exercises, and brainstorm sessions geared towards "whole-school, whole district" sustainability. The conference segments revolve around best management practices to "Green Your District", "Green Your School" and "Green Your Students". Six breakout sessions held over the two-day conference include Let's Talk Trash – Inspiring Gen Z to Grow their Green Roots, Increasing Student Achievement through an Improved Building Environment, Overcoming the Barriers to Improving School Food, Collaborating for Schoolyard Habitat Restoration, Education in the Southeast & Beyond, and Successful Education for Sustainability Strategies from Leading School Districts.

The School District of Palm Beach County is proactive in sharing lessons learned about green schools and environmental education with other school district around the country. Mr. Joseph Sanches is the District's Chief of Support Operations and reports directly to the Superintendent of Schools, Mr. E. Wayne Gent. Mr. Sanches is a member of the Board of Directors for the U.S. Green Building Council and has presented educational seminars at numerous conferences including, but not limited to, the K-12 Facilities Summit, The School Equipment Show, Florida Green, Energy and Climate Conference & Expo, Florida Educational Facilities Planners Association and Association of School Business Officials International.