

NEW WEATHER STATION HELPS TEACH KIDS *AgriScience*

DUNDEE ELEMENTARY ACADEMY UTILIZES WEATHERSTEM DATA TO EXPAND STUDENTS' HORIZONS

by CHERYL ROGERS

DUNDEE ELEMENTARY ACADEMY students are making bridges out of marshmallows and testing them to see what design would support heavy truck traffic through Tampa. They are using straws to design tall and sturdy observation towers, with SeaWorld in mind. They are building—and launching—rockets; in their classrooms they are using iPads and iPods.

Now Dundee Elementary Academy, a public magnet school where the focus is science, technology, engineering, and math (STEM), is the first in Polk County to have its own weather station.



"Parents love it. They know how to dress their kids in the morning," says Dru Gainey, the school's International Baccalaureate (IB) coordinator. "It's not a generic weather forecast for the area. It's specific for our school."

As one might guess, hands-on learning is a priority at the school for kindergarten through fourth graders. Since WeatherSTEM was installed February 23, the entire school has been using it. "We've been collecting data," says Vivienne Squire, a second grade teacher at the school on Frederick Avenue in Dundee. "I'm teaching them how to use a weather site."

WeatherSTEM is the brainchild of Ed Mansouri, the chief executive officer and founder of the Tallahassee-based educational software company Ucompass. It measures temperature, humidity, amount of rainfall, rate of rainfall, overall solar radiation, ultraviolet radiation, and barometric pressure. "Instrument readings are uploaded to us every minute throughout the day and night. These weather instruments at the schools are transmitting data to us. We put it in a database and store it perpetually," he says.

WeatherSTEM data is available instantly 24 hours a day, seven days a week. People can visit a website and get the weather; WeatherSTEM alerts also are available through a Facebook application. Its cloud camera takes a picture every minute—and produces a movie at the end of the day.

"We've brought WeatherSTEM so far to 19 counties," says Mansouri, who holds a master's degree in Meteorology from Florida State University. "We're still in the early stages."

He is introducing students of all ages to the practice of working with data, which he says is a "next generation" job skill. His goal is to develop a weather and climate course curriculum that can be used by the Florida Virtual School and at high schools statewide.

To that end, he is developing a statewide network, which also will enhance students' knowledge of Florida geography. "I'm having a good time with it. I've wanted to be a weatherman since I was six years old," Mansouri says.

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At Dundee Elementary Academy, students have been checking the temperatures of water in cups inside and outside. And they've been learning how to use weather information, generally, in their lives. "I have a few families that are farmers actually. The kids are telling me they've logged on [the website] at home with mom and dad," Squire says.

Gainey discovered the weather station at the Florida Educator Technology Conference in Orlando more than a year ago, about the same time they learned they'd probably be receiving federal funds through the Magnet School Assistance Program. Dundee Elementary Academy became a magnet school last August and is in year two of a three-year process to become an IB school. The IB program is noted for its rigorous standards and global focus.

Because the academy's kindergarten through second graders already were studying weather, Gainey thought the weather station would be "cool." He called to inquire about potentially buying the system with grant money, only to learn they were eligible for a free unit because no

other school in Polk County had it.

Students have a chance to apply their weather knowledge directly with agriculture. At Dundee Elementary Academy, students are also growing tomatoes, snow peas, broccoli, carrots, bell peppers, strawberries, green beans, lettuce, squash, an assortment of spices, and edible flowers. Kindergarteners have a six-week garden unit where they learn how plants grow and what nutrients need to be in the soil. Ten hydroponic plant towers were installed to supplement raised beds.

It is pretty unusual for an elementary school to have agriscience in the curriculum, though a lot of middle schools and high schools have Florida FFA chapters and an Ag Department. "We want our students to be well rounded in all the sciences," says Sara Molchany, the STEM lab teacher.

What the school offers is different than the FFA and 4-H Club programs. It is offered during the school day, is broader in scope, and currently does not include showing animals like the after-school programs, she says. "We are actually trying to launch a 4-H program through the

school," Molchany adds. "A lot of our students have some sort of agricultural background."

Meanwhile, Mansouri is working with growers and students to establish a cooperative relationship where students can study the weather on farms and supply weather alerts, making growers' jobs just a little bit easier. He is developing the program with a "very rural" school district in Madison County near Tallahassee. "Our vision is a school-farm partnership," Mansouri elaborates. "Imagine if the students could become the meteorologist on behalf of the farms."

WeatherSTEM equipment and installation costs \$3,000; ongoing support, maintenance, and management are additional. The system is available to farms and funding assistance is available through the Florida Department of Agriculture and Consumer Services at (850) 617-1715.

WeatherSTEM, which is part of the National Lightning Detection Network, additionally is being used by some universities for emergency management. Folks can learn what the weather is like at Dundee Elementary Academy by visiting <https://polk.weatherstem.com/Dundee>. ag

