

Monica Davis: Teaching kids to love science

By Eunice J. Hart
Staff Writer

An oversized slinky became a "high tech" scientific tool to measure seismic waves the other day in Monica Davis' science lab at the West Campus.

As she and a student stretched the flexible wire out several feet, Davis wanted to find out if the books were right about p-waves traveling faster than s-waves.

Two other students stretched another slinky beside them.

Depending on how it's manipulated, a slinky can mimic a p-wave (or compression wave) or an s-wave (that curves and expands).

The p-wave won, which evoked a certain wonderment

from Davis.

"P-waves do travel faster than s-waves," she marveled like a youngster discovering something for the first time.

"Coooooool," chimed Jessica Kokinos, a senior who held the other end of the slinky from Davis.

Proving one of the adages

of this 1997 state and mid-continent Earth Science Teacher of the Year: You don't truly learn something unless you teach it.

Call her an eternal student.

It has everything to do with her style

of teaching, which is not to sit students down and lecture to them and why so many of them respond with such enthusiasm.

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— Monica David

Teacher

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She gets involved and gets them involved.

"I address everything with diagrams, videos and lab," she said.

Then she pushes them, says T.J. Brooks, a senior.

"It's different, it's challenging," Brooks said. "It's challenging because of how difficult the tests are."

In the past three years, Davis has spent about 14 summer weeks at science workshop seminars Arkansas, Maryland and Alabama gathering new ways to teach earth science.

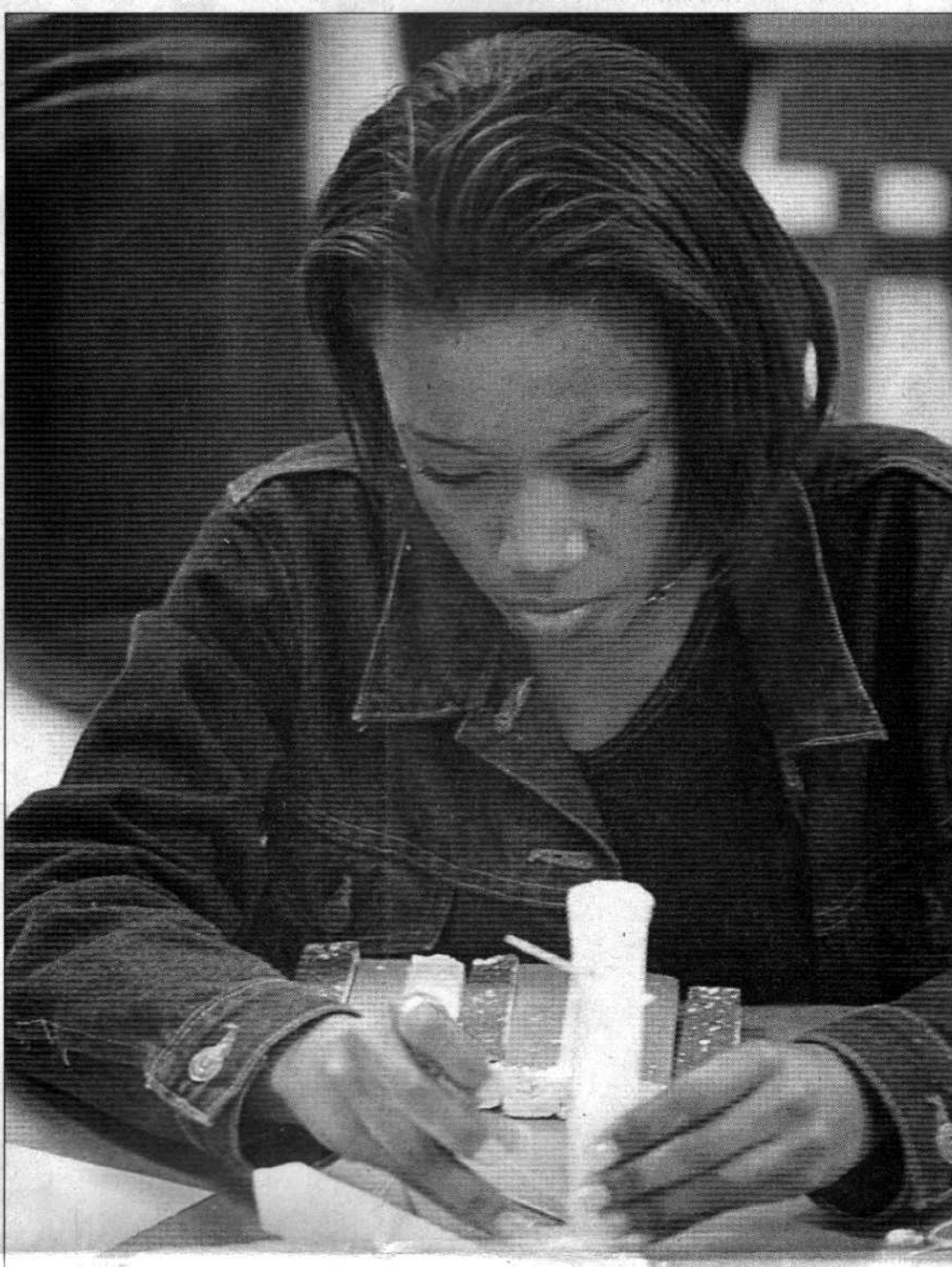
In fact, an experiment in building earthquake-proof structures she taught last week came from a workshop in Maryland called the Seismic Sleuth, which teaches earthquake curriculum.

Students are given supplies such as Styrofoam foundations and beams and toothpicks and stretched-out paper clips to hold them together in an attempt to create an earthquake-proof structure.

The catch is they have a \$30,000 budget (on paper, of course) to buy the materials they think they need and each team has to appoint a materials person, an accountant, a chief engineer and a construction worker.

"It puts a little bit of reality in it," Davis said.

The structures must withstand Davis' "high tech shake table" that consists of a cardboard box with a string to balance the edifice and to shake it sideways, and a platform to shake the structure up and down.



"I try to teach things that are relevant because, for instance, they're not always going to live around here, they may move to an earthquake prone zone," Davis said.

All three teams on this day survive the shake table, but only two survive a test of holding up nine books.

The first team to finish, according to Davis, spent only "\$200" to build a pyramid type structure that would not withstand even one book.

"They act like it's their own money," Davis said. "They're acting like the point is to do it as cheap as possible."

Wrong.

Some other projects during the year have included planting flower and vegetable gardens and making compost in her ecology classes. Land cover studies out at Burns Park measured ground cover and tree canopies in a typical 30 by 30 meter plot.

Davis didn't start out wanting to teach, trying out journalism and then history in college, which landed her a job as a paralegal right out of college. After three years in a clerical job after that, she returned to school at age 27 to become a science teacher.

She has been at the West Campus ever since.

Davis says she enjoys 11th and 12th grade students because of their certain level of maturity.

"They think they're adults, but not quite," she said. "They're more secure about who they are . . . they have kind of determined their direction."

Indeed, Davis interacts with



her students as if they are adults, but to a certain extent. She carries on a continuing banter with T. J. Brooks, a smart alecky but intelligent senior, throughout the class period.

After they complete their work for the day, Brooks takes out a mouse trap he has made for another class.

"Put that up, it's considered a

weapon," Davis tells Brooks. He begins to laugh at the notion that a mouse trap could be considered a dangerous weapon.

"You tell me one mouse that wouldn't consider that a weapon," she quips.

Along the way she has had at least two students express a sincere interest in pursuing a career with a science back-

ground, and she feels good in knowing she has helped give them that background and pique that interest, she says.

One student from a few years ago is now a meteorology major at the University of Oklahoma who has benefited from her tutelage and was encouraged by going on a trip to the National Weather Service.

"If I know that they're interested, I try to help them along," she said.

Another student whom Davis had in her first year of teaching anatomy has come back to tell her she did a good job at it.

"She wanted to become a registered dietitian," Davis said, "She kept her notes and pulled them out for college."

That student ended up making As in college, and Davis says it's that kind of news that makes her feel good about the career she chose somewhat later than most — and still learns from every day.

Her favorite earth science unit is earth history, which seems to satisfy her history bug and pique her curiosity about things like fossils and the earth's geological layers. And that's when teaching is fun.

"It's kind of like figuring out a puzzle," she said.