

# Science lab's computers click

(Editor's note: This story is part of a new series, *Today's Lesson*, which occasionally chronicles classroom programs and activities in the Farmington Public School District.)

By TIM SMITH  
STAFF WRITER

Farmington Harrison High School student Jessica Carps dropped the makeshift parachute, assembled from a coffee filter, two strands of thread and single paper clip. It drifted down a guide string from ceiling to floor, toward an ultrasound motion sensor.

Soon, Carps and other students in the Micro-Computer Based Lab for Physics, or PACT, were looking at a nearby computer screen, which took up a portion of the flat, green experiment table. With coaching from accelerated physics teacher Dennis King, they analyzed a distance vs. time graph - indicating how long it took their experimental parachute to reach its maximum speed, something called terminal velocity.

Part two of the experiment followed. Carps dropped the parachute again and she and the rest of her five-person group looked at the velocity vs. time graph.

That information came up on the screen while King talked with the group about factors such as how air resistance impacts speed of a falling object.

"The faster it goes means there's more air resistance," King said.

The numbers and graph lines jumped around some more, simply by adding weight - via a second paper clip - to the parachute.

King instructed Carps to drop the now heavier parachute again.

"Not too bad," he said. "Keep doing it until it (drops) nice and straight" to obtain a better reading from the motion sensor.

Across the classroom, students Jon Loree, Tressa Parrelly and Leanne Shultz added paper clips to their parachutes and found out if results were close to their predictions. Then, they added yet another paper clip, repeated the exercise, and immediately saw how the extra weight affected graphs.

It was easy for them to find the different kinds of data they wanted to compare, such as time, distance, velocity, acceleration and force. All they had to do was click onto the menu bar and find the pertinent category. But the quicker method of teaching also requires students to think and make decisions faster, too.

So far, they've been up to the challenge. "It helps you understand concepts much more when you can do it yourself," Loree said.

His lab partners agreed that seeing is

believing.

"I'm glad we have this," Shultz said. "I learn by seeing."

And, noted Parrelly, the technology enables students to better retain lessons than if they were "watching teachers do it" on the blackboard.

Obtaining rapid-fire experiment results, along with quick comparisons and enhanced retention, are some of the main benefits of the hands-on PACT lab, in its second year at Harrison.

"The more they can see what's happening," King said, "they get more of a feel. They learn intuitively what's going on."

Concurring were Carps and students throughout the class, who are learning the kind of technological skills that should benefit them in college and future careers.

"It makes it easier, you can compare everything," Carps said. "When you do it you're more likely to remember than if you read it in a book."

King, a 27-year veteran at Harrison, agreed that computer technology benefits teachers, too. It's more challenging, but also more rewarding.

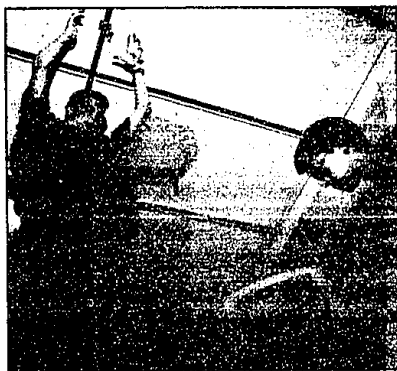
"I had to work up all new labs (for experiments)," said King, who attended national workshops on the concept and then, in 1996, sold the school board on earmarking \$70,000 out of the budget for the eight-computer PACT lab. "But

now you have the power you didn't have before, to explain and demonstrate real world phenomena you could never look at before."

"You just can't collect data as quickly or accurately using the old-fashioned methods."

Later in the class period, King's students dropped ping pong balls onto the motion detector.

"They (students) will find air resistance won't affect it (ping pong ball) at all, unlike a parachute," King said. "Parachutes don't descend very long before they reach terminal speed" and subsequently slow down because of air resistance. On the other hand, a ping pong ball is still building speed as it hits the floor, he



STAFF PHOTO BY BRIAN MITCHELL

Drop time: Junior Jon Bjorklund, left, drops a parachute made from a coffee filter as Derek Lewis checks the data at the computer in Dennis King's accelerated physics class at Harrison High.

noted.

But there was one result King and the students didn't need computers to know.

"Ping pong balls are light," the teacher said, smiling. "So they're not going to hurt the motion sensor."

## Former special ed teacher guilty in sex-for-drugs case

By BILL CASPER  
STAFF WRITER

A 41-year-old Redford Township man, who formerly taught special education students in Farmington, pleaded guilty Tuesday morning to reduced charges of criminal sexual conduct.

Jeffrey A. Downing, accused of exchanging marijuana for sex with two, teen-aged brothers, pleaded guilty to two counts of third-degree criminal sexual conduct on the day his trial was scheduled to begin.

Both of the victims formerly lived in north Redford in the neighborhood where Downing lived alone, township police said. Downing is not married, police said.

He originally was charged with six counts of first-degree CSC, but avoided trial by pleading guilty to the lesser felony offenses as a result of a plea bargain agreement between assistant Wayne County prosecuting attorney Patricia Leonard and defense lawyer Eric Lumberg.

Lumberg could not be reached for comment.

"We did what we felt was appropriate under the circumstances," Leonard said of the plea bargain. "It alleviates the young boys from testifying. He should receive a fairly respectable sentence. The (sentencing) guidelines call for a sentence of five-to-10 years and we hope the sentence is closer to 10 years."

Downing was remanded to the Wayne County Jail pending sentencing Dec. 18 by Wayne Circuit Court Judge Timothy Kenney.

The maximum penalty for a conviction of third-degree CSC is 15 years in prison. Conviction of first-degree CSC carries a maximum penalty of life in prison.

Downing formerly taught special education students, ranging in ages from 11-16 at Warner Middle School in the Farmington School District, school Superintendent Bob Maxfield said. The students he taught are in grades six through eight, Maxfield said.

"This is a tragic situation for all concerned," he said. "It's a horrible thing for the people involved, the victims and their families, the families of the students he taught here, and Jeff."

Downing was suspended, with pay, immediately after school officials learned of the charges and he subsequently resigned, Maxfield said. Downing was a teacher in the district for 15 years, Maxfield said.

During a March 25 preliminary examination in Redford's 17th District Court, the older brother, then 17, testified that he had sex with Downing more than 30 times during a two-year period.

He and his younger brother by about a year befriended Downing, who would give them rides to the movies and let them "hang out" at his house, the older sibling testified. He testified that he was 16 when he first met Downing in September, 1995, while he was seeking odd jobs, like cutting grass, with a friend to make some extra money.

The teen said he knew Downing for six months to a year before the sex acts began. After Downing developed a friendship with the teens, he began showing pornographic films in his house while they smoked marijuana, the older youth testified.

Downing began offering marijuana for lesser sexual activities, but they gradually escalated, the teen said. Even after the youth moved out of Redford with his father, the youth testified that he would return to Downing's house to get more marijuana.

The younger brother testified that he went with a friend to Downing's house for more than six months and had sex with him four or five times a week.

Redford police Officer John Golinske testified that officers confiscated 30 marijuana plants in the basement of Downing's house and a quantity of loose marijuana in a shoe box. Pornographic tapes also were confiscated from Downing's house, Golinske said.

Downing also pleaded guilty to manufacturing or growing marijuana, but a delivery of marijuana charge was dismissed under terms of the plea-bargain agreement.

Redford police first learned of the teens' allegations March 9 when officers were called to Downing's house in response to a reported altercation.

Only two victims were sexually assaulted, but two other teens alleged that Downing provided them with marijuana, Golinske said. Three of the youths attended school in the Redford Union School District and one went to school in Livonia, he said.

"I'm generally happy this is over with for the kids," Golinske said.

## New parks commissioner appointed

The city of Farmington Hills has appointed Carl Christoph to the Parks and Recreation Commission.

A Farmington Hills resident since 1979, Christoph is an area attorney who holds a bachelor's degree from Michigan State University, a master's degree from Eastern Michigan University,

and a law degree from the University of Detroit.

His main focus on the Parks and Recreation Commission will be the continued maintenance of the park system that has been built over the past 12 years.

He also serves on the city's Commission on Aging.

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