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science spectrum

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That's life!

District stresses 'hands-on' approach to science

By Tom Baer
staff writer

An estimated 2,000 bees reside in a hive at one end of Doug Cooper's very *special classroom in the Fairview* School in Farmington Hills.

Clear plastic covers one side of the hive so that students may watch as bees store honey in the combs. A narrow tube, also clear, allows the bees to be seen as they come and go from the out-of-doors.

Toward the center of the room, Crictor, a rather lazy boa constrictor, occupies a cage. Five mornings a week, dozens of excited third graders handle the snake. Youngsters who'd rather not touch the reptile can at least finger his recently shed skin.

The bees and the snake are two popular elements of the Farmington Public Schools' Science Center, which for the past two months has been offering the district's third graders a "hands-on" approach to some of the natural sciences.

The science center, which is contained in and around Fairview, isn't the major part of Farmington's elementary science program. But it has been, or will be, an exciting half-day experience for most of the district's third graders.

"It's supplemental," said Cooper, an award-winning educator who's been teaching science to youngsters for 23 years.

Cooper, the science coordinator for the Farmington schools, set up the center with the help of an outdoor education committee.

"It's one of those things we hope will make science a little special and exciting for students," he said.

LEARNING SCIENCE from a textbook is fine, Cooper said, but seeing, doing and even touching the real thing is even better.

'If anything's special, it's life. The environment we live in is our lifeline . . . our energy, our food, our oxygen. I like getting young people involved in it.'

"In Farmington we're continuing to stress the hands-on approach," he said. "In one national study, they feel we start losing students in subjects like science as early as the third or fourth grade.

"That's because science becomes a memorize-all-those-new terms-out-a-book kind of a thing. We don't want science to be like that in Farmington.

"We feel that doing is learning. Reading is a start, but it usually doesn't stick very well. But if you get to be involved with it, then you tend to learn."

In addition to the bees and the snake, Cooper's classroom contains a fish quiz board (match the name to the correct photo and a light comes on), a working weather station, numerous stuffed animals and birds (bought at auction) and a section of a maple tree to demonstrate a method of collecting syrup.

Outdoors, in a nearby woodlot, students can "witness the decay process and know that it's natural," Cooper said.

The woodlot is crowded with sugar maples, but there's also a sprinkling of beech (American and blue), hickory and tulip trees. Some wildflowers in the area include trillium, adder's tongue, May apple and wild geranium.

A foot bridge carries students across a vernal pond in which frog eggs are visible. "Students can ponder why some insects walk on the water," Cooper said.

THE WHOLE CONCEPT of the science center is to give the students an understanding of and a respect for the environment in which they live.

"They'll see a number of things dealing with the environment," Cooper said. "They'll see a hollow tree and understand that it can still be alive and be a home for something as well.

"If anything's special, it's life," he continued. "The environment we live in is our lifeline . . . our energy, our food, our oxygen. That's where it's at. I like getting young people involved in it."

And so far Cooper's students have enjoyed being involved.

"One little preschooler went through the center, touched the snake and so on," Cooper said. "Later, he brought his mother back. He was like a tour guide.

"Here's this little preschooler, maybe 4 years old, taking his mother through, and I just couldn't believe the recall he was bringing forth. To me, this is because of excitement. They're seeing things they like and are excited about. And therefore they're learning."

WHAT PART of the center do the *youngsters seem to be enjoying the* most?

"I think the bees," Cooper said. "They can watch the bees bringing in the pollen and putting honey in the combs."

But the snake, which consumes two dead rats every other week, rates a close second.

"It bothers me that it's not a native snake," Cooper said. "Of course, I always underline the fact that boas are non-poisonous. In fact, they're rather lazy snakes, which mades them easy to handle and to see features on."

Cooper hopes to expand the center to include sections on astronomy and natural energy. Some of the equipment for that project is stored in an adjacent room.

Building the center has been as much of a learning experience for Cooper as touring it seems to be for the students.

"It's a continuous learning process," he said, "but that's what science is all about.

"We as educators are starting to stress the idea that, really, science is more a process of asking questions than it is of getting answers. As we go into the process of problem solving, we usually develop more problems than we find answers.

"That's why science grows and goes forward."

The science center is an exciting half-day experience for Farmington's third graders.

Students check for life in a vernal pond on the woodlot at the Farmington schools' science center.

'It's one of those things we hope will make science a little special and exciting for students.'

photos by RANDY BORST/staff photographer

Jason Dettore feels the moss on a boulder. Students are encouraged to touch — but not harm — things on the nature trail.

'They're seeing things they like and are excited about. And therefore they're learning.'

Doug Cooper and a group of youngsters from William Grace Elementary School examine a worm from the pond at the Fairview Science Center.