

Schools add specialists

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one month before school started.

Now two years into the science consultant program, educators agree students seem to be more enthusiastic about learning science.

"They are always excited when they come in," MacAdaragh said.

BECAUSE THERE are few problems with teaching science in the first, second and third grades, MacAdaragh's job has been targeted toward helping fourth and fifth grade classes.

"The material and ideas are more complex in the fourth- and fifth grades," MacAdaragh said.

Although she goes to the class to teach science, MacAdaragh does not replace the classroom teacher. Her role is to act as a consultant who leads students in particular lessons. The regular classroom teacher during the week follows up and continues the lesson.

"When I'm there is not the only time they get science," MacAdaragh said.

Before arriving in the class on her scheduled day, MacAdaragh provides the teacher with a plan of the lesson

she intends to give the students. The lesson includes the role or involvement expected of the classroom teacher.

"The (classroom) teacher stays in the room," MacAdaragh said.

While the students, including the first through third graders, use a science textbook, the emphasis in learning science is the "hands-on approach."

For example, MacAdaragh's lesson for fourth graders at Kenbrook Elementary last week involved motion and speed.

Instead of trying to grasp these principles solely through a textbook, students can get on the floor with a plastic ramp and steel ball to see what happens when the ball is dropped at different levels along the ramp.

The same process is used for teaching about the life sciences. Instead of relying on a book to inform students about the animal kingdom, the district's science center in Woodbrook Elementary comes in handy.

At the center, Cooper has an array of cacti, frogs, fish and even a tarantula, as well as anything else that's needed to help teach science.

WITH MACADARAGH's job as a

consultant and the help of SCIS, program in the elementary grades has also changed from a matter of memorization and recognition to learning how to think.

What the students learn to do while they are learning about science is how to follow directions, recording information, research, ordering their thoughts and problem solving.

"They really begin to see the proper perspective. It's a more realistic and understanding approach," MacAdaragh said. "We're demanding some kind of synthesis in their heads."

Because she does not have the time to go to each of the district's elementary schools, MacAdaragh has worked with fourth and fifth graders in only three of the schools, Longacre, Beechview and Kenbrook.

Now that the use of science consultants to aid in teaching elementary science is considered successful, the Farmington School Board recently formally adopted the program as a permanent part of the curriculum. In addition, next year more fourth and fifth graders will benefit from the program when two more consultants are hired.

Kathleen MacAdaragh, science consultant for the Farmington schools, leads a class through a problem in physics.

Kids are learning science a new way

Continued from Page 1

worse than anyone else, but we were dissatisfied."

What educators realized was that students were not being taught "process skills" — how to collect data and conduct research, Cooper said.

Educators also realized that science must be established as an important academic course in elementary schools, "which it has not been," Cooper added.

That's when district educators decided to teach science using the "hands-on approach" by which students actually become involved with science rather than learning solely through a textbook. The hands-on approach is also a method of teaching students how to think and to figure things out.

"THE HANDS-ON approach to science is really the most effective approach," Freedman said. "It's more than just reading. They are actually doing."

"One of the greatest values of learning science is learning to think," he said. "It's got to help their thinking process all the way through school."

The district seven or eight years ago switched to the Science Curriculum Improvement Study (SCIS), a "hands-on" program.

Elementary teachers using SCIS also had the help of a science center set up by Cooper. The science center at Wood-

brook Elementary is like a warehouse of props and materials teachers need in teaching science.

While SCIS is a hands-on approach which involves actually doing rather than learning solely through a textbook, the elementary classes are also provided with a Heath science textbook, Cooper said.

"We operate under the concept that good science is 50-percent content and 50-percent hands-on," Cooper said.

While teachers became comfortable teaching science with the help of SCIS through the third grade, the material in the fourth and fifth grades became increasingly complex and more difficult to teach, Cooper said.

AND teachers came up with a suggestion for improving it.

They suggested using a science consultant to help teach science in the upper elementary grades.

The idea was born when the Farm-

ington school board, which had set up a \$100,000 curriculum fund, asked educators to submit ideas for "innovative programs," Freedman said.

"We felt let's get a science specialist into the classroom," Freedman said.

"We ran it as a pilot program."

When students, parents and teachers responded positively to the pilot program with Kathleen MacAdaragh as the consultant, the school board decided to fund it for a second year.

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