## New Science Program in Donegal

 elementary schools

Third graders at Maytown study symmetry. From left to right are; Toby Applegate, Joe Garber, Robert Arnett and Erik Williams.


Kindergarteners at Grandview play with blocks, before learning geometric principle with them. From left to right are; Mary Jane Derr [who built a bridge], Dustin Piersol [with a "thing to climb on'] and Stacie Wagner [with a garage].


Sixth graders at Seiler experiment with light. From left to right are; Jim Buckley Hank Rathkey, Mike Shelly, Rick Hallgren and Scott Houseal.

After a couple years of pilot studies, the Donegal elementary schools have fully committed themselves to a new kind of science program. Instead of learning science fundamentals from textbooks, the kids are now learning with their own hands, by performing experiments.

A good example of how the new approach works is provided by Mrs. Alexander's 6th grade class at Seiler. Her students are currently studying light.

In the past, they might have gone to a textbook to find out what color results when red and blue light are mixed, or which end of the spectrum is diffracted farthest by passage through a glass of water. Today behind the dark curtains in he auditorium, they figure he auditorium, they figure it out for themselves, with
light bulbs and sheets of
colored plastic.
In Mrs. Carol Gingerich's 5th grade class at Riverview, the same hands -on approach is being used to teach the kids elementary statistics. Starting with heaps of marbles, peas, and various smaller particles, the students first discover how hard and boring it is to count by ones, then work out progressively more sophisticated ways of estimating the number of particles in a heap.
In Shirley Trimmer's 3rd grade class at Maytown, the kids are studying symetry, with mirrors and geometrically patterned sheets of cardboard. "At first, I couldn't see the purpose of this project," the teacher admits. Then on organic chemistry stu ent told her that sym metry is her that sym metry is the basis of his own specialty.

The program extends all the way down to kindergarten. At the Grandview School, Mrs. Libhart's kindergarteners are learning a lot from simple-looking wooden blocks. The lessons start with ordinary play (this reporter watched the class build various bridges, boats and gas stations) and end with the kids learning to compute the relative volumes of cubes.
Although the program does not use textbooks or tests, all the teachers this eporter interviewed thought that the students were learning a lot more from this program that from the old-fashioned method of teaching science. Apparently, when the kids construct and execute their own experiments, they understand what they have tudied much better than when they memorize facts when they memorize fact


Fifth graders at Riverview learn to estimate quantities of particles by breaking them into manageable units. From left to right are; Brenda Zink, Joanna Hedgepeth, and Teddy Reeves.


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