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## The Pen Gets a Whole Lot Mightier

THE holiday season may be a time for love, hope and all that jazz. But let's face it: for millions of Americans, a big part of it is getting new toys.

Sometimes, "toys" means playthings for grownups, like iPods and flat-screen TV sets. But for the younger crowd, "toys" still means toys. And one toy in particular, though it's been available for only a month, already appears high on the "hottest toys" lists prepared by [eBay](#), Toys "R" Us and others: a \$100 educational gadget called the Fly Pentop Computer.

There's something a little odd about the term "pentop computer." Terms like laptop, palmtop and desktop tell you where you use the computer - but you don't use the Fly on top of a pen.

Instead, the Fly is a pen - a fat ballpoint pen. (The company says that its focus groups found the term "pentop computer" infinitely sexier than "pen computer." Nobody ever said consumers are logical.)

The Fly is so fat because it contains an AAA battery, a computer chip, a speaker and, mounted half an inch from the ballpoint tip, a tiny camera. For all of its educational, interactive tricks, the Fly pen requires special paper whose surface is imprinted with nearly invisible micro-dots. As you write, the pen always knows where it is on the page, thanks to those dot patterns and the camera that watches them go by.

Logitech and other companies sell exactly the same technology to adults, but it's never caught on. Those pens simply store what you write - not as text, but just as a frozen graphic - and later transfer it to a Windows computer.

But Fly's maker, LeapFrog (maker of LeapPad, the popular interactive book reader), has much greater ambitions. In its incarnation, which is aimed at "tweens" (8 to 14 years old), no PC is required or desired; instead, you get crisp, instantaneous audio feedback from the pen's speaker.

STAGGERING possibilities await a pen that can read software right off the page as it moves, and the Fly package comes with a sparkling sampler. For example, as you tap countries on a world map, the pen pronounces their capitals or plays their national anthems. On a glossy, fold-out mini-poster of a disc jockey's setup, you can tap buttons to get music samples, or tap turntables to produce record-scratching sounds; then you can record your own compositions or compete, memory-game style, against other players. There's even a sheet of stickers that, when tapped, produce appropriate sound effects. (For my two elementary-schoolers, the belching mouth alone was good for 20 minutes of hilarity.)

The Fly also comes with something called Fly Open Paper: a sheaf of blank pages that permit a much more free-form range of creative activities. You indicate which program you want by writing its initials in a circle.

For example, in Notepad mode (draw an N in a circle), you can write up to three block-letter words at a time; the

pen then reads back what you've written. In Scheduler (circled S), you can write "Tuesday 3:45 P.M. student council"; at the specified time, the pen will turn itself on and speak the appointment's name.

Then there's the Calculator (circled C), which is for nerds what "Pinocchio" is to wooden puppets. As you draw a set of calculator buttons, they come to life, speaking their own names when tapped and announcing the mathematical results ("one hundred sixty-nine, square root, equals thirteen").

Fly Tones (circled FT) is an unforgettable demonstration for both parents and children. You draw a piano keyboard, complete with black keys if you like - and then you can play it. You can even draw and operate buttons that change the instrument sound, adjust the tempo, record and play, and so on. Talk about brainstorming on a napkin!

These starter programs are stored in a white plastic cap on top of the pen. But the Fly can accommodate additional cartridges - sold separately, of course (\$25 to \$35 each).

Each comes with appropriate pads, sheaves or books of the specially printed paper. There are hits and misses among these add-ons (which include Spanish, math and spelling), but the good ones break some interesting new ground.

Fly Through Math, for example, is dedicated to multiplication and division. You write the digits of a math problem into the squares of the included graph paper. Like a watchful parent or teacher, the Fly's little voice-over elf comments immediately when, for example, you forget to carry the 1 or misplace a decimal point. This in-problem feedback is far more helpful than a computer program that just tells you that your final answer is wrong.

Then there's Fly Through Tests. From a Web site ([flypentop.com](http://flypentop.com)), your sixth- through eighth-grader can download multiple-choice quizzes in PDF format that correspond to the chapters of specific popular published textbooks (math, science or social studies). You print them onto the blank paper that comes with this cartridge, and voilà: instant interactive tests, specific to the textbook you're using in class.

Fly isn't solely about academics. The original software cartridge includes games, jokes and even Easter eggs (secret features). You can also buy kits like Flyball (interactive baseball cards that let you manage a team), Fly Journal (a lockable diary with daily writing prompts) and Fly Friends (girlie activities pertaining to shopping, fashion and boys).

The Fly is a very unusual and highly engaging educational tool. There are, however, some flies in the ointment.

Sometimes the Fly speaks your written words perfectly; other times, you wonder if the little camera needs a tiny contact lens. I filled an entire sheet of Fly paper trying to get it to recognize my block-lettered "LUNCH WITH STEVE," but it never did stop pronouncing the middle word as "W dot."

Then there's the learning problem - not the academics, which have obviously been professionally prepared, but learning the pen itself. Each cartridge and activity seems to require a different approach. For example, after you've memorized the 10 different circled-letter codes of the Fly-paper activities - not an especially easy task to begin with - you never use that method again in any other activity.

Making choices from a menu is also clumsy, since you can't actually see the menu. You have to wait for the pen to read off your choices; when it says the one you want, you draw a check mark on the page. Turns out God invented computer screens for a reason.

The company acknowledges these 1.0 glitches, and promises improvements in future versions. But even now, three things are for sure. First, the Fly offers the same kind of interactive, child-driven experience as, say, the LeapPad, but it's infinitely more compact and portable.

Second, you can't imagine how engaging the Fly is until you witness it in a young person's hands; my young test Flyers were so hooked, they tolerated an amazing number of frustrating glitches.

And finally, when it comes to children's technology, a sort of post-educational age has dawned. Last year, Americans bought only one-third as much educational software as they did in 2000. Once highflying children's software companies have dwindled or disappeared. The magazine once called Children's Software Review is now named Children's Technology Review, and over half of its coverage now is dedicated to entertainment titles (for Game Boy, PlayStation and the like) that have no educational component.

In that light, it's encouraging to see a company spend \$100 million - and refine numerous new technologies along the way - to create an educational tool for children. It's even more encouraging to see how well it succeeds in most of its teaching missions. And it's positively uplifting to see, if those "hottest gift" lists are any indication, that the effort will soon be rewarded by parents and children who know a good thing when they see it.

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