Home Education
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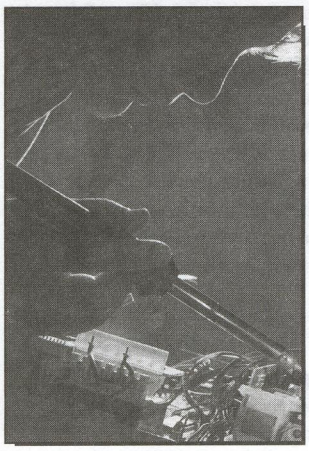

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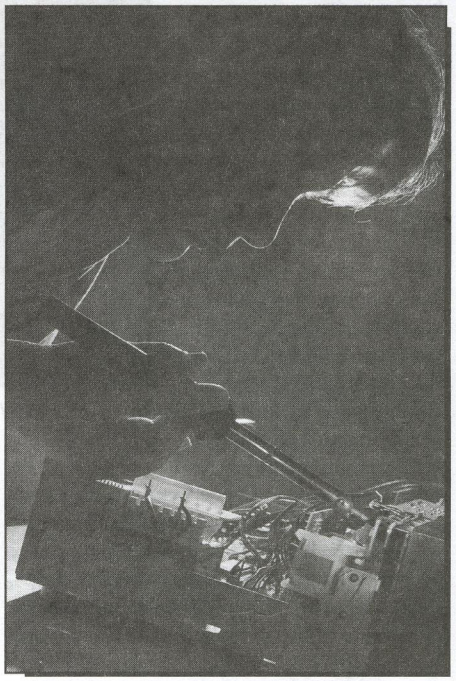
Rubbish Rethought

Finding Learning at the Country Dump

Adam McKenty



One of the boys applies his soldering iron to a recent find.

A mountain of wet scrap metal and old appliances looms beside my smiling eight-year-old brother. "Look!" he says, "A windshield wiper motor!" He plucks a muddy lump of metal from the debris, holding it gingerly between the fingers of his over-sized work gloves. Rain drizzles from a murky sky onto the piles of old cars, discarded bicycles and rusty propane cylinders surrounding the dump's grubby parking lot. For most people, this is a place to dump their trash. But for my young brother, it's a walk-in Christmas stocking, filled with exciting things to be discovered.

These things—electronics, metals, mechanical gadgets—are scraps of technological exhaust from the inefficient engine of Western civilization. Though perhaps broken, they are not useless, only dormant, waiting for a more mature society—or an enthusiastic child—to dig them up and put them back to use. Once discovered, the finds become a de-facto homeschool science course, but in reverse: from the dumpster, to the workbench, to the textbook.

The sight of my brother's blond head peering around the rubbish gathers some curious looks from other dump visitors. He's the youngest of six self-directed homeschoolers, and unconventionality runs in the family. (Our dad, for example, once bought the parts for a massive 1940s-era armoured troop-carrying snowmobile and assembled it in Grandma's urban driveway. He had plans for an expedition to the Arctic Circle, but they were somehow abandoned during the 1960s, and he headed south instead.) Curious stares are hardly new, and neither is dump-diving.

It really began a decade ago, with an older homeschooled brother of mine, on an ordinary trip to drop off refuse. After tossing our garbage into the bins of household trash, we took a stroll around the broken appliances that straggled into the woods beside the rural dump. We picked up an old VCR and brought it home.

An old truck provides a brief diversion from collecting at the dump.

Beneath its battered plastic cover, we found a dazzling array of electronics, gleaming as though they'd just dropped off the assembly line. Motors like those we'd bought out of catalogues, prized possessions for years; gears and belts perfect for building model cars; dozens of capacitors, resistors, and diodes; and the fascinating components whose weight and craftsmanship told us they must be vital to the machine's function, but whose purpose we could only guess at. It boggled our frugal young minds that anyone would throw such a thing away.

The local dump became our

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hardware store. Like many childhood exploits, the oddity of this procurement method never really occurred to us. We made lists of what we wanted for our projects, then happily checked them off while rummaging through the scrap metal. A barbershop hair dryer and a brake drum became a make-shift blast furnace for melting metals; salvaged LEDs were soldered into a high-efficiency flashlight bulb; ball bearings from a washing machine turned into a wood lathe—and the piles of leftover junk grew in our yard like weeds.

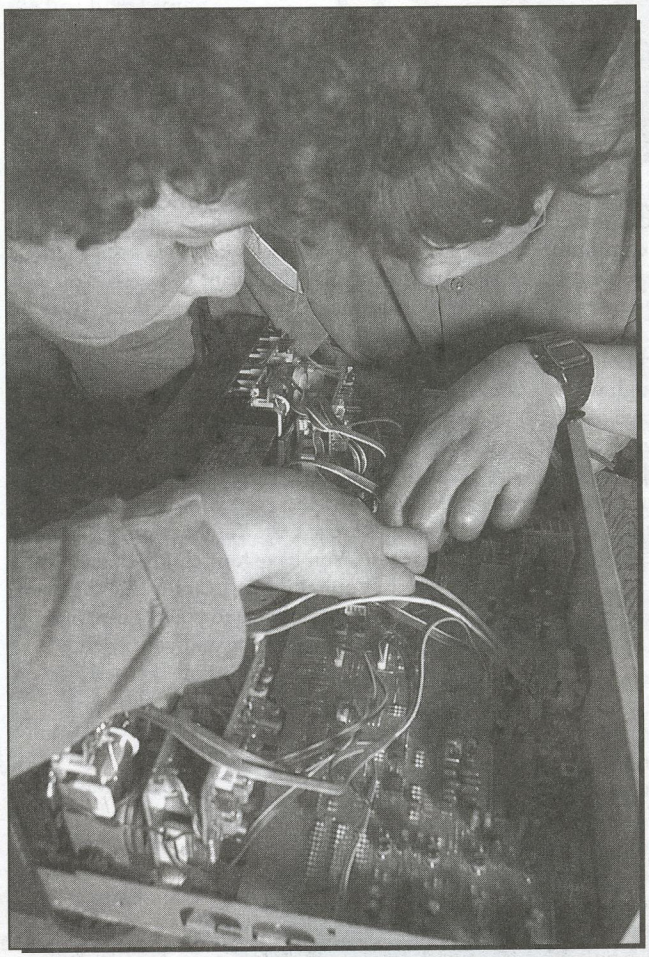
All this breaking apart and putting back together again took us on a coincidental tour through the history of technology. From earlier efforts at home-made bows and arrows and stone tools, we moved on to primitive metallurgy, then to staring at bundles of wire and bean-sized electrical components hoping to tease out, by the brute force of our curiosity, what made them tick. When we truly ran up against the boundaries of our knowledge, we resorted to textbooks. Ohm's Law was a practical solution for understanding how circuits function, and the mysteries of physics and electronics gradually assumed an active place in our childhood culture.

All this occurred under the watchful (and sometimes startled) gaze of our acutely safety-conscious parents. Though we didn't really take notice at the time, they had a major role in fostering these explorations. From an early age, they supplied us with books, tools, answers to our many questions and an open-minded perspective on what many parents would consider, at best, a waste of time.

Nowadays, though I spend more time playing with sentences than with soldering irons, I still can't escape the familiar reek of melting solder or the fascination of tracing tiny copper pathways around a circuit board—nor would I want to. Assisting my youngest brothers, the new dump-divers, gives me an excuse to tackle interesting projects I wouldn't attempt otherwise. And when one of us older folks needs a part (such as a transistor, or "three-legged"), we barter it in exchange for help finding the final screw holding a stubborn appliance together, identifying parts amongst the rubble or reassembling them into projects.

Back at the dump, cars and trucks pull out before closing time, and the sliding door rattles shut on the recycling shed. We load our finds into the car, then follow the winding country road back to our driveway and unload. Though you wouldn't guess it from this style of recycling, ours is a family of clean freaks. The dump finds, the boys' clothes, and the boys themselves all get carefully washed before arriving in the workshop.

The workshop, euphemistically known as the "school room," inhabits what was once a dining area. Coils of wire snake out from bins beneath the boys' workbenches, and the nearby coffee table is the site of a constant territorial dispute between partly disassembled dump finds, balsa wood, emerging projects, books and miscellaneous tools.



Adam's brothers examine the inside of a salvaged tape deck.

Once the junk arrives in this workshop, the possibilities—both mechanical and educational—are many. The new parts might become the next generation in a long dynasty of electric model cars. Or the buzzer on a Morse code key. Or an alarm system for the boys' bedroom. Or they might be hoarded up and bartered back and forth like seashells in some prehistoric village. Either way, it's an educational success. They learn more taking apart one old television than they would in days of sitting behind a desk studying, or weeks, perhaps months, of watching that television burping out cartoons. It's like they're acting out an unschooling parable: they dismantle the TV, agent of obesity and mental lassitude, while exercising their hands and minds in educational discovery—and having a great time.

Science is merely the reverse engineering of nature, and reverse engineering an electric typewriter teaches how original science actually happens—through observation and experiment, not through textbooks. It teaches too that discoveries can be made with one's own ingenuity rather than merely following the logs left behind from the experiments of others.

So what is the educational significance of all this for other homeschoolers? You probably know it already: teach a child how something works, and you've satisfied his curiosity for a day; teach him how to discover how something works, and his curiosity will never be satisfied, and there'll probably be capacitors on your kitchen counter for a lifetime.

Though it has its annoyances (the dump can make a crummy field trip—just ask our mother), the rewards of do-it-yourself recycling outweigh them. And the curriculum materials are dirt cheap, too: "garbage," a few tools and an open mind.

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