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Kids turn electronic waste into treasure

Old **computers** are getting a second life after undergoing a makeover in **Alex Lin's** makeshift repair room in his family's basement. The restored **computers** are now in the hands of Sri Lankan students whose school was demolished in a tsunami in 2004. Thanks to 15-year-old **Alex** and other teens in the town of Westerly, Rhode Island, schools across the world are getting wired with good-as-new electronics.

Five years ago, **Alex** read a story about the increasing number of electronics that Americans throw away, known as electronic waste, or e-waste. He sensed an opportunity to keep electronics out of already overflowing landfills and help people in need at the same time.

Alex and his buddies founded a group called the Westerly Innovations Network (WIN). They repair and update **computers** that people no longer want. Then, the team donates the spiffed-up machines to people and schools.

E-WASTE WOES

Last year, residents of the United States disposed of 2.25 million tons of e-waste, according to the Environmental Protection Agency (EPA). Most of it went into landfills, but not necessarily local ones. Advocacy groups, like the Basel Action Network and the Silicon Valley Toxics Coalition, estimate that the U.S. ships up to 80 percent of its e-waste overseas, where it may be dumped or burned.

E-waste contains elements that are hazardous to the environment, like lead, mercury, and chromium. Some of them, such as cadmium, are carcinogens, or substances that can cause cancer in humans. These chemicals often leach out of electronics when they are improperly recycled, put in a landfill, or dumped. The toxins can trickle down into surrounding soil and contaminate drinking-water supplies.

Since the e-waste generated here in the U.S. can be shipped overseas, other countries often feel the brunt of our e-waste mess. "It's just not smart in the long run to put this stuff in landfills, even here in the U.S., where most of our landfills are carefully managed," says Clare Lindsay, a project director in the office of solid waste at the EPA. **Alex** agrees. "The best way to deal with e-waste [is] to reuse it or give it to someone who needs it," he says.

SECOND LIFE

Instead of tossing old electronics in the trash, people can recycle them. Most electronics have precious metals that can be removed and reused so fresh metals don't have to be mined from the earth - a process that can be harmful to the environment. But refurbishing (fixing and updating) electronics, as WIN does, is an even greener option. That way, new electronics don't have to be made from scratch, and old ones don't have to be recycled or thrown away, says Scott Matthews, a professor at Carnegie Mellon University in Pittsburgh who has been studying e-waste for 20 years.

During a recycling drive, WIN collected 10 metric tons (21,000 pounds) of electronics in just one day! Over the past five years, **Alex** and his team have fixed more than 300 machines and donated them to those in need.

Besides sending **computers** to students in Sri Lanka, they have also shipped them to nations like Mexico and Cameroon, where other WIN branches were formed. "When we started, we had no idea that we could get anything - even a single **computer** - overseas to help people," says **Alex**. "But it worked out."