



## Trashmagination Podcast #24 – Take Apart Events and E-Waste

Welcome to Trashmagination, a podcast about reimagining trash. I'm Carla Brown.

Today's podcast is all about **encouraging people to take apart electronics & machines**. When you were a kid, did you take apart a mechanical item like a clock or a battery-operated toy to see how it worked inside? We'll talk about:

- why it can be helpful to take electronics and machines apart
- tips on how to run a "take-apart" event in your community
- artists who incorporate e-waste and other mechanical items in their work

So what are the benefits of taking apart broken electronics and machines? Here are five reasons:

- 1) You might be able to fix the items! One time when my dad's snowblower stopped working, he slowly took it apart, taking photos at every stage so he would remember how to put it back together. He cleaned and re-oiled everything, looking for any broken items. When he put the snowblower back together, it worked great.
- 2) You can separate the item into metal, rubber, plastic and other categories so they can be reused, recycled or thrown away. When it's all together, the whole item goes to landfill.
- 3) It can give you a new appreciation for electronics and machines. It might inspire you to give it more frequent maintenance, like re-oiling or replacing parts.
- 4) For some people, taking items apart inspires them to pursue engineering and design careers.
- 5) It might inspire you to make art from the components, or you might be able to find artists who are looking for those items for their own work.

I was lucky to have role models who liked to take things apart. My grandfather was an airplane mechanic in Gander, Newfoundland when it was a bustling place, the last stop where many planes could refuel on their way to Europe. He learned how to fix airplanes not by attending school but by hands-on learning. Later my uncle Kevin also became an airplane mechanic.

Taking things apart and putting them back together – that is how I taught myself to build websites and how to quilt. Now there are Youtube videos that show you how to take apart and fix almost everything. I have heard stories that many people who ended up studying engineering and computer science - they got their start taking things apart.

And yet, many people don't take things apart. Sometimes that's because today's devices are not designed to be easily taken apart or refurbished. Cars are now computers with wheels. You can't find screws in your smart phone.

Here's a somewhat tangential story but it shows that taking things apart can be fun! There is a business in New York called the Wrecking Club. You pay a fee to bash up dishes, televisions and a bunch of other items. This is marketed as stress relief. I would love to pick up those broken dishes to make mosaics!

## How to Host a Take-Apart Event

My family has taken apart some items at home, including a treadmill and a mattress/ box spring. [links] We have also attended take-apart events in the community, mostly at Maker Faires. Here are tips on how to host a take-apart event.

1. **Collect items with screws** - Beyond computers and household devices, it is fun to take apart broken mechanical toys. The Kid Museum located in Bethesda, Maryland and the Exploratorium in San Francisco [<https://tinkering.exploratorium.edu/toy-take-apart>] have take-apart events exclusively for taking apart toys. The items you take apart don't need to be new – old VCRs are just as fun as more recent technology.
2. **Avoid glass, power sources, hard drives, blades and dust** - Avoid anything with glass or screens including monitors, scanners, tablets and smart phones because glass can break. This includes old televisions, which can hold a charge. Avoid shredders with sharp blades. Avoid vacuums because they can be messy. Perhaps you could clean them first because they have great components. Remove hard drives before the event to ensure data protection. Some organizers cut off all electrical cords. Some events offer safety glasses and gloves. If hosting an event for younger children, you'll need child-sized glasses and gloves.
3. **Protect the workspace** - Establish boundaries where people should take things apart with tape or a rope so people don't carry stuff all over the place. Tiny bits of metal and wire fall out. You will need to sweep and vacuum afterwards. Furniture might get scratched, so use old furniture or cover tables with taped-down cardboard or some other protection.
4. **Gather screwdrivers and pliers** - Especially pointy-nosed pliers, locking pliers and extra tiny screwdrivers from computer toolkits. A collection of Allen wrenches helps too.
5. **Take-apart is a gentle activity** - Remind participants not to bash things, like the Wrecking Club in New York City. It may take strength to get things apart, but this is an activity of unscrewing panels. You might not invite very young children. My kids loved this activity most when they were ages 8-12. Do not offer hammers.
6. **Consider hosting girls-only events** - Where I live in northern Virginia, there is a program called Girls Excelling in Math and Science or GEMS that hosts take-apart events for girls.
7. **Get take-apart items from friends** – Be careful when asking for donations. People might think you will permanently gather items and they might dump items on your door step after the event. Instead, spread the word with contacts who understand this is a short-term idea.
8. **Have a storage plan** – Do you have a place to store the donated items before the event? Do you have an e-waste recycling company ready to take the items afterwards?
9. **Take photos of deconstructed items** - To engage photography enthusiasts, consider setting up an area where you can lay out all the components of an item & take a photo. For inspiration, check out the book *Things Come Apart* by Todd McLellan [<http://www.toddmclellan.com/thingscomeapar>].
10. **Fix things** – Participants could take things apart in order to fix them like the story of my dad's snowblower. There is a concept called Fixer's Collectives [[link](#)] where people bring broken items to a community event to learn how to fix them. It's one thing to see inside a device and another to actually fix it.
11. **Offer suggestions of what people can make** – Some events offer glue guns or other tools so people can make art. For example, people love taking keyboard keys to write their name. At the start of the event, make it clear whether people can take things home. You might say people can bring home finished or in-progress artwork or jewelry only. I gathered project ideas on a Pinterest board that you could share at the take-apart event to give ideas of what to look for when they are deconstructing. You could even teach how to make specific items like bracelets or earrings. You might also offer a soldering tutorial as part of the event.
12. **Help participants process what they are learning** - I would love to host an event where I gather observations from participants about what they are learning. What is surprising about what's inside these devices? What trends do they see in how things are made, comparing older and newer devices?

## Challenges of E-Waste

Have you had that sickening feeling when you drop your phone and your heart skips a beat as you check if the screen is broken? E-waste is the fastest growing source of waste in the world<sup>1</sup> and we produce 50 million metric tons of e-waste per year<sup>2</sup>, with only 15-20% getting recycled<sup>3</sup>. The United States is the leading source of this waste.

Many devices contain harmful components such as lead or cadmium. Workers overseas have unsafe exposure in recycling operations that do not follow best practices.

This all sounds bleak. The goal of Trashmagination is to find value where others do not see it. A take-apart event is a great opportunity to engage people in the idea of reusing electronic elements. Hopefully it can also inspire artists to find uses for these materials. So next, I'd like to share stories about some artists who have done that.

## Artists Who Incorporate E-Waste in their Work

- Julie Alice Chappell - <https://www.facebook.com/juliealicechappellinwonderland/> - insects from computer components – Etsy shop - <https://www.etsy.com/uk/shop/DewLeaf>
- Gabriel DiShaw - <https://www.instagram.com/gabrieljunkart/> - <https://www.gabrieldishaw.com/>
- Marcele Godoy - <https://www.instagram.com/elle.ewaste/> - She braids necklaces from computer cords – Etsy shop is <https://www.etsy.com/shop/marcelegodoy>
- Peter McFarlane - <http://petermcfarlane.com> – landscapes on circuit boards (scrapscapes), fake dinosaur fossils embedded in circuit boards
- Andreea Strete - Tiny Robots - <http://tinyrobots.eu> – robots encased in resin as lockets – Romanian artist
- Leonardo Ulian - <http://www.leonardoulian.com/> - mandalas

If you have e-waste, find local e-waste vendors in the United States via the website [earth911.org](http://earth911.org).

You can always download notes about each Trashmagination podcast episode at the website – and in this case, I'll make a downloadable with a list of items that are great to gather for take-apart events, and which to avoid.

If you have hosted a take apart event and have more tips to add, or if you make items from e-waste, I would love to hear about your projects at [trashmagination@gmail.com](mailto:trashmagination@gmail.com).

Also, I would love to hear about anything unusual that you took apart. I'll start a discussion about this on Trashmagination's Facebook & Instagram accounts – please share, "What was the first thing you ever took apart?"

Until next time – may you see take-apart events as just another source of art supplies and fun times in your life.

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<sup>1</sup> U.S. Environmental Protection Agency. "Wastes – Resource Conservation – Common Wastes & Materials – eCycling." Web Accessed April 11, 2015.

<sup>2</sup> Sthiannopkao S, Wong MH. (2012) Handling e-waste in developed and developing countries: Initiatives, practices and consequences. Sci Total Environ.

<sup>3</sup> "Statistics on the Management of Used and End-of-Life Electronics." US Environmental Protection Agency. Retrieved 12 March 2012.