

Home Scavenger Hunt Project Guide

PROJECT OVERVIEW:

Take apart old electronic and mechanical items you find around the house, saving the parts and pieces for use in future projects.



Project Intro Video:
Home Scavenger Hunt



Inspirational Video:
Things Come Apart



PROJECT CATEGORY:

Tinkering

DIFFICULTY LEVEL:

Intermediate

TIME RANGE:

60 - 90 minutes

ESSENTIAL SKILLS/ MINDSETS THAT YOU MAY LEARN:

Design Thinking

Electricity/Electronics

Circuits

Systems and
Complexities

Mechanical Interaction

Troubleshooting

Prototyping

Collaboration

TOOLS AND MATERIALS:

- Old battery-operated toys (and batteries)
- Craft materials: straws, fabric, paper, stick glue, etc.
- Screwdrivers, pliers, scissors
- Wire cutter or strippers
- Safety glasses

AT HOME SUBSTITUTIONS:

- This is a perfect at-home project, but if you need more items for future parts and pieces, you may want to take a trip to the local Dollar Store or Goodwill. Many of these stores are home to broken DC electronics that you can salvage for gears, batteries, wires, motors, and LEDs.

MATERIAL PURCHASE LINK:

<http://tiny.cc/Intelbuylist>

Project Steps Dream it!

Things come apart. And inside, you will find some wondrous mechanics, electronics, and parts that can be reused for future projects. So go ahead, look around your house, and see what items you can find that may well become key materials for future projects.

1 Take a tour of your house and make a list of the items you might be able to use in the future. [05]

2 Collect the items you find useful—if they need to be taken apart, check with the owner of each item first. [05]

Draw It!

3 Pick two or three items to sketch. [02]

4 Without taking them apart, sketch each item and guess what useful elements you may find inside. [08]

Build It!

5 Using the appropriate tools, take apart your scavenged item. Simplify the object to its most basic parts. [10]

6 Look at the parts you have found in your scavenged items. Save any pieces you think may be useful in future projects.

Share It!

7 Show off the coolest pieces you plan to save for future projects to your family and friends. [05]

8 Clean up your area, put away your tools, and save any extra gears or parts you may want to use in the future. [05]

Expand it!

If you enjoyed yourself here, you will also like our Toy Hacking project, where you can take apart DC toys, find their individual parts, and recombine them into new machines. Now that you have these extra parts on hand, you will be even better prepared to create a super-unique toy hack.

Another option is to bring your friends, peers, or coworkers into this activity by putting on a “Junk Box Challenge.” To prepare, create multiple boxes of household items (broken toys, craft materials, tape, paper, etc.). Next, challenge your friends to create something—you get to pick the theme—with only the parts in their box!



DASH OF DESIGN:

Use design thinking to get your creative juices flowing! Watch our video to learn how you can use design thinking to create a better end product.



SAFETY FIRST!

Only take apart DC (battery-operated) devices, as they are much safer than their AC counterparts (or devices that plug directly into the wall). Also, be sure to follow the guidelines below in order to stay safe:

- Never work on an electronic device that is plugged in or has batteries inside.
- Wear safety glasses at all times.
- Never cut or pry toward yourself.
- Use the proper tools (screwdrivers rather than pliers for screws, etc.).
- Read the following capacitor safety guide: [wikihow.com/Discharge-a-Capacitor](http://www.wikihow.com/Discharge-a-Capacitor)

PRO TIPS:

Engineered items typically have parts and systems that work together to solve a problem or need. One of the best ways to really understand an item is to separate it into its: 1) parts, 2) purposes, and 3) complexities. Look at each of the parts of the devices you are taking apart, and think about how each part or system works together.

- What are the object's parts?
- What are its purposes?
- What are its complexities?

To really dig in, download and read the Parts, Purposes, and Complexities guide from Harvard's Project Zero: <http://tiny.cc/partspurposes>

HELPFUL RESOURCES

- Tom Mclellan's *Things Come Apart* book and website: toddmclellan.com/thingscomeapart
- More Things Come Apart videos and information: petapixel.com/2013/05/05/photos-of-everyday-gadgets-dismantled-into-their-individual-parts/
- Disassembling electronics

NEED MORE HELP AND INFORMATION?

Contact us at: intelfutureskills@intel.com