# Taking electronics apart — safely

MakerBreaker is all about curiosity: opening up old gadgets to see how they work and harvesting useful parts. It's great fun and completely safe when you follow a few simple rules. Please read this with a grown-up before the session.

## BEFORE YOU START — THE CHECKLIST

- [ ] Work with a grown-up nearby, at a clear, well-lit table.
- [ ] Unplug the device. If it ran on the wall, leave it unplugged for the whole session.
- [ ] Take out any batteries and set them aside.
- [ ] Wear eye protection — safety glasses, or even sunglasses — and tie back long hair.
- [ ] Have a small box or bag ready for the parts you harvest, and one for rubbish.

## WHAT TO BRING — AND WHAT TO LEAVE AT HOME

### ✅ Great to bring

- Old radios, toys, remotes, computer mice & keyboards
- Toy cars, small fans, headphones, wired phones
- Calculators, alarm clocks, game controllers
- Anything small that ran on batteries or USB

### ⛔ Never bring / never open

- Microwaves — they store a dangerous charge
- TVs & computer monitors (especially old tube ones)
- Anything with a big heavy block inside (capacitor)
- Fluorescent / energy-saver bulbs (contain mercury)
- Swollen or damaged batteries, vapes

## THE SAFE WAY TO TAKE SOMETHING APART

1. **Make it safe.** Unplugged? Batteries out? Good.
2. **Find the screws.** Look under stickers, rubber feet and battery covers. Use the right screwdriver — don't force it.
3. **Open gently.** Ease the case apart. If it won't budge, look for another screw rather than pulling hard.
4. **Explore & harvest.** Spot the motors, speakers, LEDs, wires, switches and gears. Snip wires with the grown-up's help.
5. **Sort & tidy.** Keepers in your parts box, sharp bits and rubbish away safely. Wash your hands afterwards.

⚡ **Battery rule:** never bend, squeeze, poke or heat a battery — especially the flat, pouch-shaped lithium ones in phones and power banks. If a battery is puffy, hot or leaking, don't touch it: tell a grown-up and recycle it at a proper drop-off.

## IF SOMETHING GOES WRONG

- [ ] Small cut or scrape → clean it and use a plaster. Tell your grown-up.
- [ ] A battery gets hot, smokes or smells → move away and let an adult handle it outdoors.
- [ ] Not sure if something is safe to open → don't. Ask first. When in doubt, leave it out.

**Grown-up sign-off.** I've read this guide and will supervise the teardown.

Name _____ Signature _____ Date _____

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