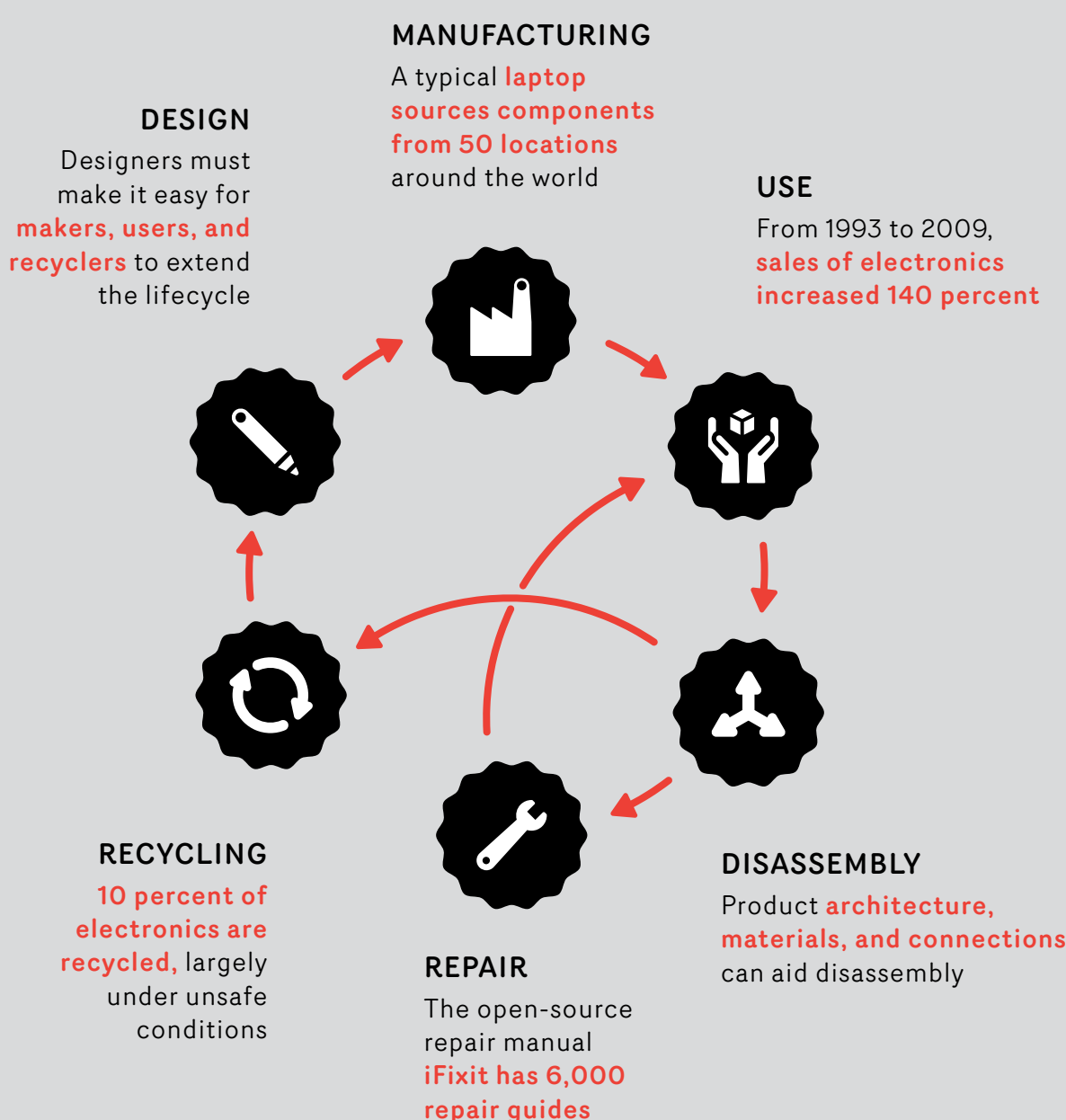


# DESIGN FOR PRODUCT LIFETIME

Your phone's screen breaks, and you can't replace it. The battery's glued in, and you can't remove it. We toss 20-50 million tonnes of e-waste worldwide each year, largely due to simple design decisions. As a result, chemicals ripple through our drinking water and the lungs of trash pickers. As we embed electronics in more products, their lifespans decrease: refrigerators last 10 years; cell phones just a few. But designers can influence user behavior and make it easier to disassemble, repair, and recycle.

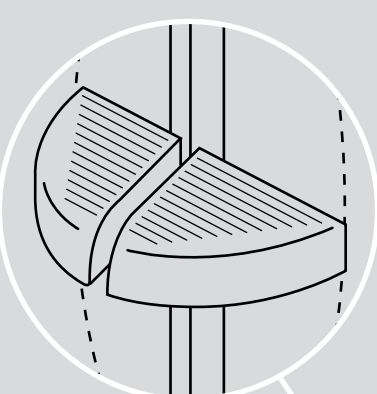
**Autodesk**

## PRODUCT LIFECYCLE



## DESIGN STRATEGIES

### MATERIALS



#### Heirloom Materials

Choose materials and finishes that will last and get better with age.



#### Avoid Coatings

Use inherent color. Avoid paints, additives, and surface treatments.



#### Material Recycling

Choose materials that are recycled and can be recycled again in as many places as possible.

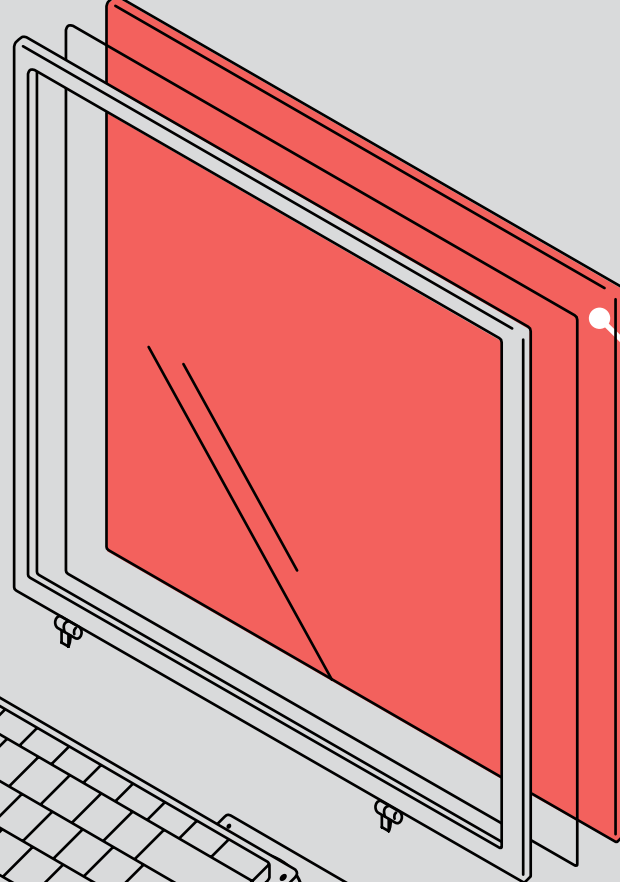


#### Separate Materials

Make it easy to separate dissimilar, hazardous, and non-recyclable components.



### CONNECTIONS



#### Convenient Fasteners

Use intuitive snap-fits, clips, or sliding connectors. Use coarse threaded screws for speed.



#### Avoid Glues

Use only glues that are easily soluble. Use hand-strength press-fits.



#### Durable Fasteners

Use fasteners that will stand up to repeated use. Use nuts and bolts for strength.

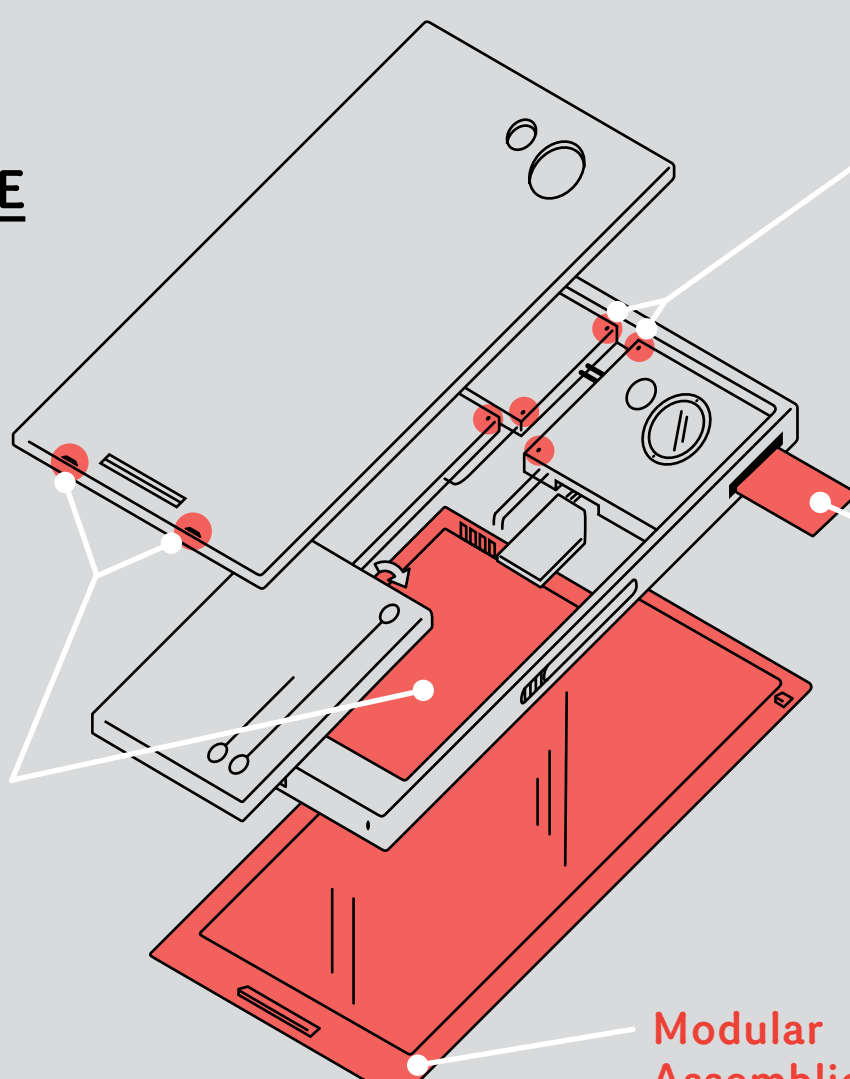


#### Common Fasteners

Use standard fasteners, and only require a few standard tools.

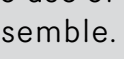


### ARCHITECTURE



#### Affordances

Use form and design elements to provide clear clues about how to use or disassemble.



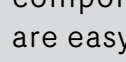
#### Accessible Connections

Access fasteners from the same axis. Hold multiple parts with one fastener.



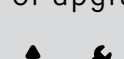
#### Strive for Simplicity

Reduce the number of parts and use standard components that are easy to replace.



#### Modular Assemblies

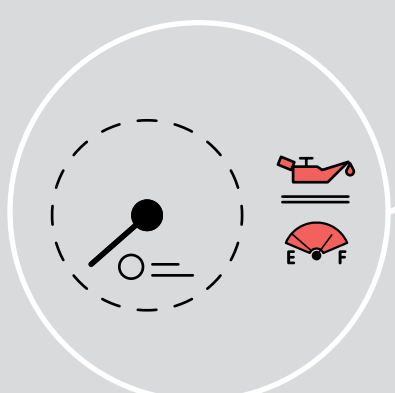
Ensure easy access to need maintenance or upgrade.



### INFORMATION

#### Conditional Warnings

Create prompts to let users know when your product needs service or repair



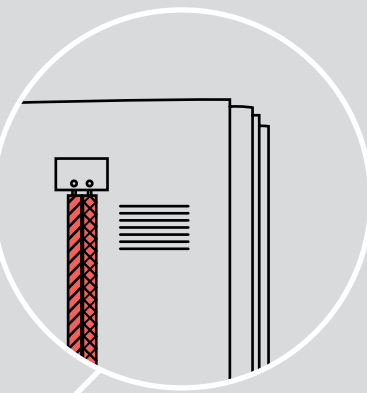
#### Real-time Feedback

Provide actionable data about environmental impacts so users can improve their behavior.



#### Embed Instructions

Label and color-code products for troubleshooting. Apply recycling codes.



#### Clear Documentation

Make service documentation accessible, easy to understand, and open source.



**DESIGN FOR (YOUR) PRODUCT LIFETIME**

STUDENT CHALLENGE · CORE77.COM/DFYPL · SUBMISSION DUE WEDNESDAY, OCTOBER 10



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