

EVERPHONE

IAT 431 – DESIGN WORKBOOK
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CRITIQUE

Planned obsolescence is a modern business practice in the name of profit. It creates a surplus of obsolete products and consumers are forced to upgrade or replace products entirely. The hidden costs consist of climate change, natural resource depletion because of a dependence on non-renewable sources, and excessive waste, water, and air pollution. Additionally, it creates ewaste, or electronic waste. There is a need for educational materials in this topic.

MOTIVATION

Our team members saw current issues with planned device life spans, related to device servicing. Especially with the “Right to Repair” movement where repair shops/individuals are fighting against large tech companies preventing third-party involvement in their product design. Thus, forcing customers to purchase their costly services or purchase new for a comparable amount.

It affects us as designers because we must be aware of how companies are using design to prevent or exclude people from expressing their needs and individuality. As well as the impacts on the environmental, social, and cultural levels. There is a disconnect between us as consumers and the various impacts. We hope to highlight the environmental impact and alleviate the issue with our design, by providing educational information and material.

OUR PROJECT

Everphone is a “build your own phone” kit where you can customize your very first phone, understand how to properly take care of the device, and learn the materials used for its components. An educational pamphlet conveys the information.



AUDIENCE



In this possible future we want our ideology to be ingrained into society. By focusing on the youth, we hope to instill in them the knowledge and desire to use this device throughout their whole life. It encourages the repair and reusage of component. We envision a world where people acknowledge the waste and pollution that come with producing devices. They will carry that mindset throughout their daily lives and it affects how they treat their products.

INITIAL CONCEPTS

UNIVERSAL COMPONENTS FOR REPAIR

This is a modular component system that would be integrated in daily everyday items such as phones, laptops and computers. Consumer access to universal components would result in less variety in the manufacturing processes for businesses, which reduces the quantity of natural resources needed to produce, reduce landfill waste, and increase the ability to reuse and repair.

PRODUCT LIFE SPAN + EXTENDING LONGEVITY

This is an application that allows provides users with information on the average lifespan and waste generated from their commonly used products. This raises awareness on how often these products are thrown out or replaced. Also the app would provide community advice on reuse of items.

COSTS BEYOND UPFRONT PAYMENTS

This concept highlights the hidden costs when buying newer devices. This scenario puts focuses on extra costs that can arise in the upkeep of products from companies, such as Apple, which may end up being more costly and troublesome than the cost of the original product.

HUMAN RIGHTS FOR THE ENVIRONMENT

Instead of companies having human rights, we apply these to the environment. There would be a human ambassador to advocate for interests of the environment. Companies would have to comply with production limits to limit waste and provide relief to natural resources. People would have to adjust life to reduce their environmental impact.

ADDITIONAL CONCEPTS

We had more concepts that were related to our main concept that we could've branched off to as well as another concept that focuses on using planned obsolescence in a positive way but these could be easily integrated into the previously existing concepts.

ENVIRONMENTAL PLANNED OBSOLECENCE

This is doubling down on planned obsolescence but using it in the benefit for the environment. Components such as phones are built with environmentally friendly biodegradable materials that would last several weeks. The phone would be able to be planted as a seed once it is unusable which helps impact the environment.

MODULAR ECOSYSTEM

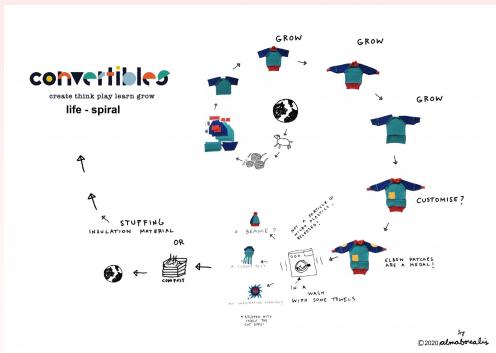
This concept deals with modular components being used in everyday devices such as phones, computers and laptops. Parts such as batteries can be swapped between each device which helps promotes reusing. To have this scenario to work the government would have to be involved to restrict other devices to be made.

REPAIR CENTERS

These centers would be run by volunteers and workers to help people repair old/broken devices. This would help promote learning how to repair devices but also reduce product waste and reuse old parts.

INSPIRATION

RELATED CONCEPTS



CONVERTIBLES SEW-YOUR-OWN CLOTHING KIT FOR CHILDREN

Convertibles is a sewing clothing kit made by design studio Almaborealis. For educating children on self creation, creativity and it promotes sustainability.



Children use their creativity to sew their own unique pieces of clothing that can be customised & reused. It adds personal value because they created their clothes instead of buying.



JUDY SAFETY & EMERGENCY KITS

JUDY creates emergency kits for any situation. Their focus is educating people with informative, accurate content and planning tools so families are better adjusted for disasters.

JUDY curates books for children that covers difficult topics in a format for children to understand more easily. There is a focus on larger text and simple graphics to convey important information.



PUZZLEWARE LEARN TO BUILD YOUR OWN BEANIE - KIT

This is a learning tool guide that helps users to creating their own beanie. This kit educates people on the process and materials used to create a small clothing items, such as beanies. They also emphasize sustainability not using plastic in their kit and help educate where the materials being used come from and how it is made.



INSPIRATION

(CONT'D)

RELATED CONCEPTS



PHONEBLOKS

A mainboard allows users to attach bloks, which are third-party parts to create their own phone. There would be a blok store for people to replace broken bloks, upgrade bloks, or expand functionality in a desired manner. Users could sell back their bloks.



When a part breaks or needs upgrading, the phone is not rendered obsolete. Users can simply replace the part and keep the phone.



FAIRPHONE

Fairphone is a mobile company that produces phones with modular components. They want to create a more sustainable smartphone by using recycled and fair materials as well as having modularity for the components.

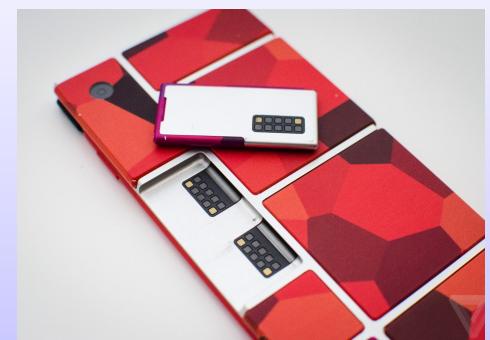


Users may be able to swap out parts or reuse older parts such as the selfie camera, battery, back cover and even the speaker



PROJECT ARA

A project developed by Google, inspired by Phonebloks. Their goal was to develop a market of many manufacturers instead of the few that retain a monopoly. However, Google killed the project because they chose to focus on software development and not hardware.



ARTIFACT IDEATION

SOME QUESTIONS WE ASKED OURSELVES:

How do we show our modular phone? Are we able to make a physical model?

If we 3D printed it, would it be feasible to put together like puzzle pieces?



Was there any alternatives we could use to display the phone?

Were we able to 3D model it to create a digital 3D display? Are there of us who can model?

If we were to make the box, would we leave the inside empty?

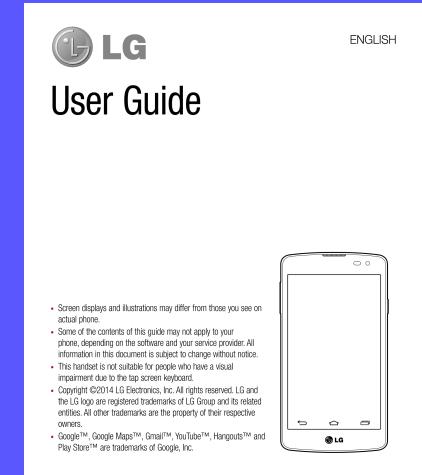
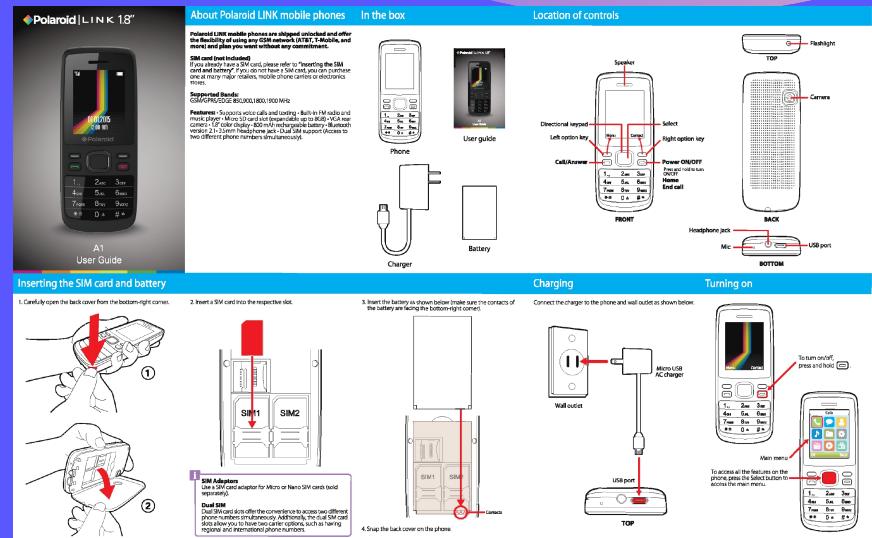
This might work against us rather than for us because the main component is missing.

What usually comes in the box when you buy a new phone?
The phone, charger, & user manuals.

ARTIFACT IDEATION

(CONT'D)

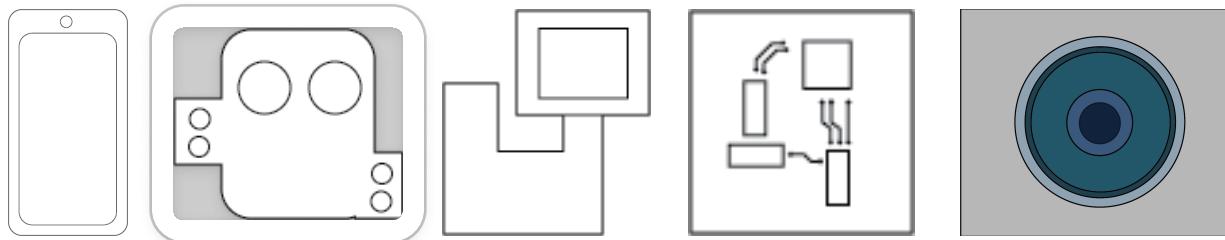
We decided to create a physical pamphlet, similar to what you would find in present day phone boxes. In this pamphlet, not only can we include generic safety care information, we could included assembly instructions as well as extra material information to target the idea of product appreciation. We looked at various UI and instruction booklet examples for inspiration.



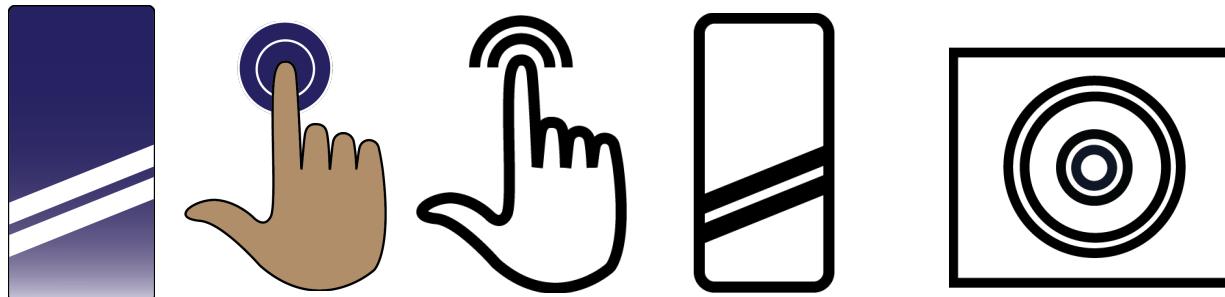
We wanted our visual instructions to be something similar to an IKEA assembly guide, with isometric diagrams.

GRAPHICAL ASSETS

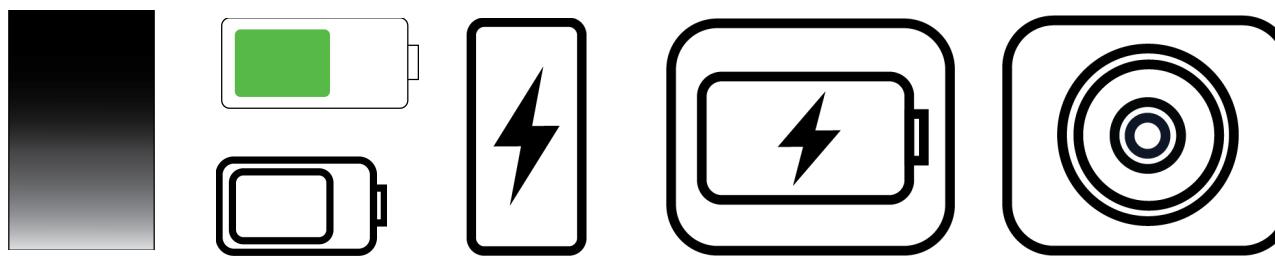
GROUP VISUALS IDEATION



These are various iterations of several parts. We experimented with a couple different styles and using either black or white or a color palette.



We also tried versions with outlines.



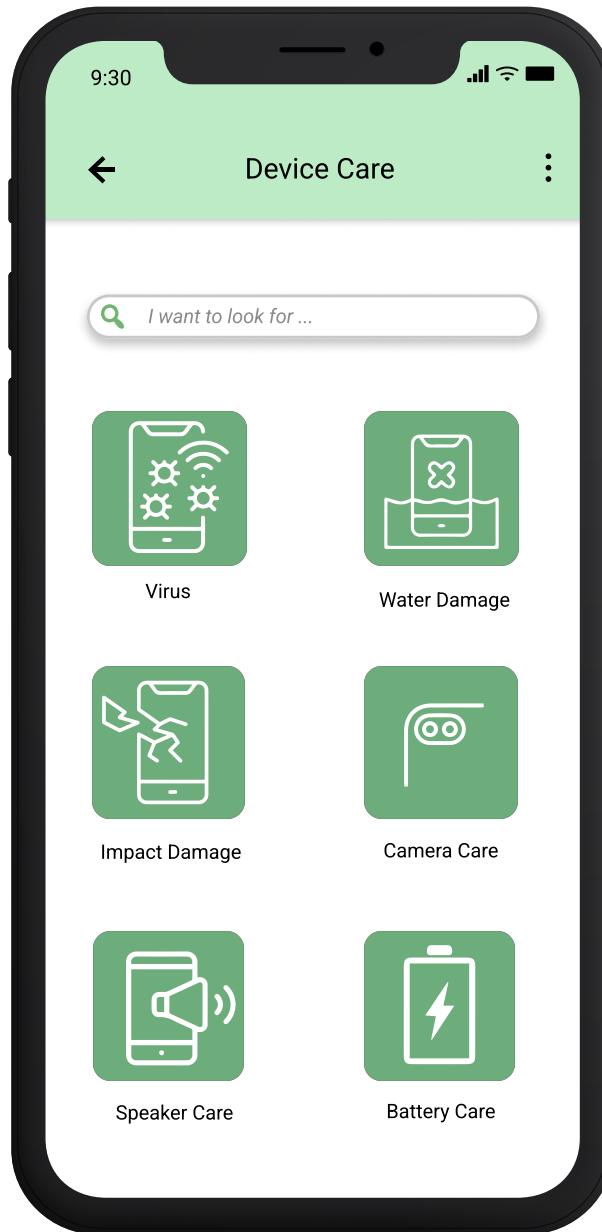
We experimented with different directions.



Some versions were more abstract and some were more literal in their visuals.

GRAPHICAL ASSETS

(CONT'D)

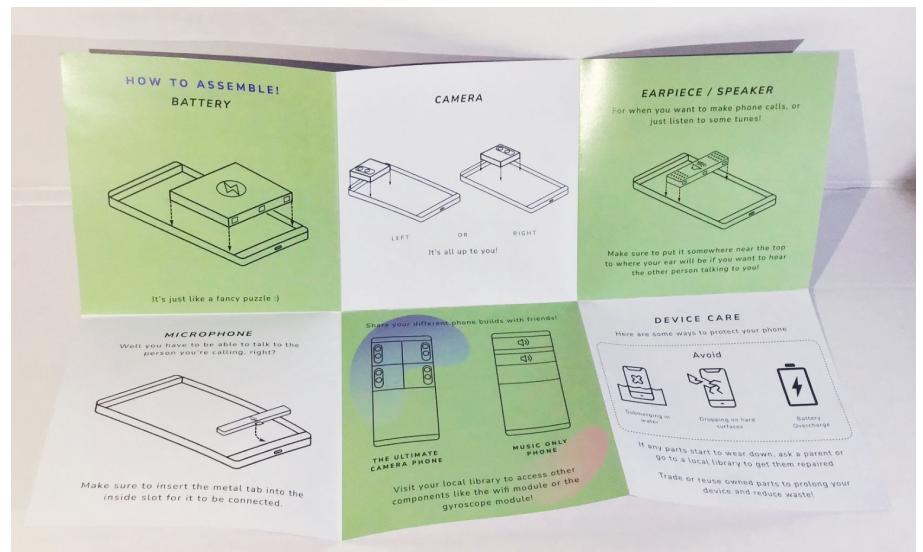


These are icon mockups of various situations that may damage the device. Additionally, there is a prototype of the application's user interface as it guides users on repair and care information.

The goal is to be minimalistic yet provide enough information so users are certain which path to look for their desired information. For future iterations, colour coordination may be an ideal way to categorize incidents as well.

FINAL ARTIFACT

PAMPHLET



FINAL ARTIFACT

PAMPHLET SIDE A

EVERPHONE

Make your very first phone just how you like it!

EVERPHONE BEGINNER STARTER KIT
FOR GRADES 4 - 7

WHAT IS EVERPHONE?

Everphone is a "build your own phone" kit where you can customize your very first phone, understand how to properly take care of the device, and learn about the materials used for its components.

WHAT IS INCLUDED:

- TOUCH SCREEN — Access your phone with a touch of your finger
- CAMERA — Take photos of the world around you
- EARPIECE/SPEAKER — Listen to music and calls on your phone
- MICROPHONE — Talk to your friends and family
- BATTERY — Power your phone

TRADE WITH YOUR FRIENDS OR GO TO YOUR LOCAL LIBRARY TO TRY NEW COMPONENTS!

TOUCHSCREEN

Indium Tin Oxide is widely used in research and industry due to its electrical conductivity.

Indium Tin Oxide is widely used in research and industry due to its electrical conductivity.

MICROPHONE

Copper is created in volcanic regions and obtained by smelting certain ores and minerals such as bornite.

GLASS =

Sand + Soda Ash + Limestone

WHAT'S IN IT?

WHAT MATERIALS MAKE UP YOUR PHONE?

BATTERY

Lithium can be found mixed up with other stuff in rocks or mineral springs! Most Lithium is produced artificially & is commonly found in rechargeable batteries.

Lithium (Li) and Cobalt (Co) are shown with arrows pointing to a lightning bolt icon representing the battery.

Cobalt is a rare element obtained mostly through refining of nickel ore.

Graphite is like the stuff you have in your pencils!

Manganese is a hard brittle metal found in minerals in combination with Iron.

EARPIECE/ SPEAKER

More Polyethylene!

CAMERA

More glass, of course.

Rubber

Rubber is good for insulating heat and electricity because it is a great electric conductor!

Iron is the cheapest and most-used metal. 90% of all metal that is refined these days is iron.

Copper is also found in this component because it is a great electric conductor!

Al₂O₃ Aluminium Oxide

Si Silicon

+ MANY MORE

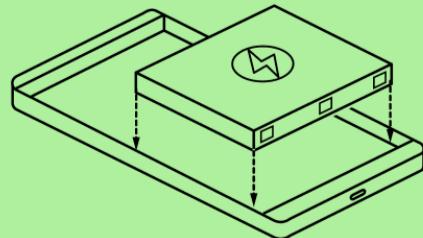
Silicon is one of the most useful elements used in a variety of things such as computer chips, solar panels and transistors.

Side A introduces Everphone and what is included. Then it provides information to education children on the materials used to create their device. If possible, the graphic examples of the materials are oriented in the real-world so it is easier to grasp.

FINAL ARTIFACT

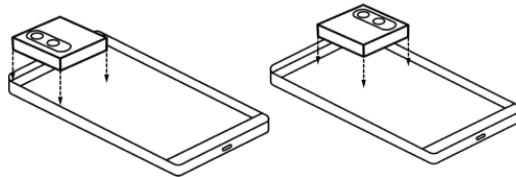
PAMPHLET SIDE B

HOW TO ASSEMBLE! BATTERY



It's just like a fancy puzzle :)

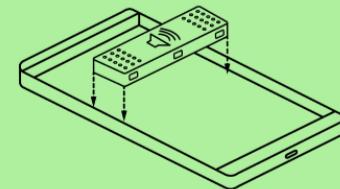
CAMERA



It's all up to you!

EARPIECE / SPEAKER

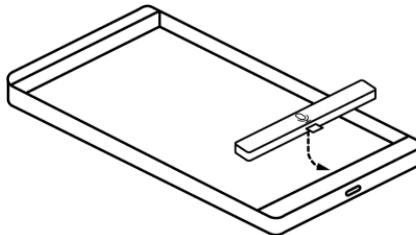
For when you want to make phone calls, or just listen to some tunes!



Make sure to put it somewhere near the top to where your ear will be if you want to hear the other person talking to you!

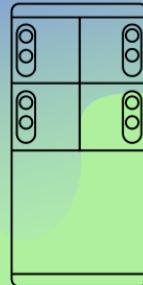
MICROPHONE

Well you have to be able to talk to the person you're calling, right?



Make sure to insert the metal tab into the inside slot for it to be connected.

Share your different phone builds with friends!



THE ULTIMATE
CAMERA PHONE



MUSIC ONLY
PHONE

Visit your local library to access other components like the wifi module or the gyroscope module!

DEVICE CARE

Here are some ways to protect your phone

Avoid



Submerging in water



Dropping on hard surfaces



Battery Overcharge

If any parts start to wear down, ask a parent or go to a local library to get them repaired

Trade or reuse owned parts to prolong your device and reduce waste!

Side B discusses assembly instructions for each piece and discusses the library that contains additional components for the phone. This encourages reuse and community exchanges which will help reduce pollution, waste, and resource depletion while fostering a sense of responsibility for one's devices and towards the environment.

FINAL ARTIFACT

INFORMATIONAL POSTER

EVERPHONE

**Beginner Starter Kit
for Grades 4-7**

This is the perfect phone kit for your child or students to create something with their own hands, to a configuration of their liking! This kit aims to teach them all the various materials that go into our products, as well as teaching them how to care for their own devices to promote device longevity. Additional components can be readily borrowed from your local library or school's library!

BOX CONTENTS:

Information & Assembly Pamphlet

Top Level — Touch screen phone body, battery, camera

Bottom Level — Microphone, speaker, charging cable

PHONE DISPLAY SIZE: 4.7 inches



Alongside our pamphlet, we displayed a informational digital ad to inform any potential customers of this new innovative product on the Everphone. It includes information on the project, box contents, and graphical representations.

REFLECTION

ADRIAN

DAVID

RACHEL

CHRISTINE

WHAT WE HAVE LEARNED

Working on this project has opened up a different mindset that I never noticed that deals with invisible costs for many things we don't really think about. I've learned how much environment impact and wastes is produced due to planned obsolescence and how society has shifted their living towards it.

I had a lot of fun working on this project and was able to learn about how planned obsolescence contributes to a culture of wastefulness by perpetuating a "buy new and buy often" mentality and limiting consumer autonomy to keep products longer by hard-wiring a "self-destruct" button in products.

With this project, I've learned that design projects don't have to always be showing off a product or to communicate a straight forward message. We've utilized using speculative design methods to provoke thought or convey a deeper message through our planned obsolescence project. We really don't think about what means companies will use to maximize profit.

This project opened my eyes to how difficult it can be to grasp what materials truly go into our devices. Specifically when creating visual icons, there were some visuals that were difficult to convey, like a transparent coding for screens. It is important to look for many references and think creatively or reframe one's perspective in order to convey the desired message.

WHAT WE ACHIEVED WITH THIS PROJECT

We created a concept that helps battle planned obsolescence by tackling it from knowledge standpoint by focusing on educating children on material use and waste as well as promoting reuse and device care.

The purpose of the project is to educate the young audience on how to save on environmental resources, and we were able to give them tools and teach them on how to minimize the amount of waste they produced by upgrading/repairing their own device through the concept of the Everphone.

As a team, we created a project that almost mimics present time but only shifts it ever so slightly to create a "what-if" future/timeline. A timeline where there are programs in place to teach people to appreciate natural resources and synthetic, and to take care of it to increase its product lifespan.

I feel we fostered an important conversation towards device responsibility and being aware of the environmental costs of our electronical devices. Many people were interested in our project and were aware of similar existing projects. The images made it easier for people to understand.

MOVING FORWARD

I plan on using the things I've learned working on the project into any future work I create, looking deeper into the surface layer and use the skills I've gained to tackle the problem in different ways

I will continue using materials from this project to further develop environmental-friendly design in the future.

Speculative design is a very interesting area of design which I think is something I should keep with me as I move forward in my design career path. I think it is an important skill to have that strays away from the typical "solving problems" mentality of design.

I think this project could be pushed forward with more sustainable materials. Additionally, more test audiences would help it improve more. The target audience is children, so ideally we would get feedback from them to make sure they understand the purpose of the project through text and imagery.

CITATIONS

PLANNED OBSOLESCENCE:

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CITATIONS (CONT'D)

EVERPHONE INSPIRATION:

PHONEBLOKS:

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PROJECT ARA:

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SHIFT6M:

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FAIRPHONE:

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MOTOZ:

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LIBREM 5:

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PINEPHONE:

[HTTPS://EN.WIKIPEDIA.ORG/WIKI/PINEPHONE](https://en.wikipedia.org/wiki/PinePhone)

JUDY:

<https://judy.co/>

GENERAL INFORMATION:

[HTTPS://WWW.ELECTRONICS-NOTES.COM/ARTICLES/CONNECTIVITY/CELLULAR-MOBILE-PHONE/HOW-CELLPHONE-WORKS-INSIDE-COMPONENTS.PHP](https://www.electronics-notes.com/articles/connectivity/cellular-mobile-phone/how-cellphone-works-inside-components.php)
[HTTPS://WWW.TECHWALLA.COM/ARTICLES/HOW-TO-ADJUST-THE-SPEAKER-VOLUME-ON-A-CELL-PHONE](https://www.techwalla.com/articles/how-to-adjust-the-speaker-volume-on-a-cell-phone)
[HTTPS://FOSSBYTES.COM/WHATS-INSIDE-SMARTPHONE-DEPTH-LOOK-PARTS-POWERING-EVERYDAY-GADGET/](https://foosbytes.com/whats-inside-smartphone-depth-look-parts-powering-everyday-gadget/)