

# **Sustainability Studio** | Modular Wear

Clare, Tara, Carlos and Kate

# A0 | The Team



## **Kate Perazzo**

Kate is 5th year student of Industrial Design at UC DAAP. She has a passion for soft goods but has breadth of experience across the design industry. She is also an avid hiker and active environmental advocate.



## **Clare Guckenberger**

Clare is a 5th year Industrial Design student at UC DAAP. She has a passion for sustainable design and research but has experience in many different areas. Outside of school she enjoys textile art.



## **Tara Prabhu**

Tara is a 5th year Industrial Design student at UC DAAP. She has experience in soft goods, design strategy, and trend analysis and forecasting. She is also a fan of all things travel and coffee & tea.



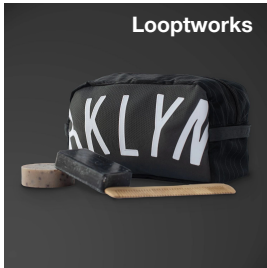
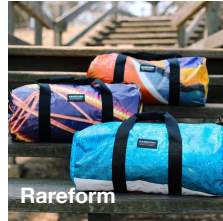
## **Carlos Reyes Zgarrick**

Carlos is a 5th year Industrial Design student at UC DAAP. He has experience and passion for soft goods, consumer electronics, and design research. Outside of school he enjoys biking and is a coffee nerd.

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# A1 | Companies We Admire

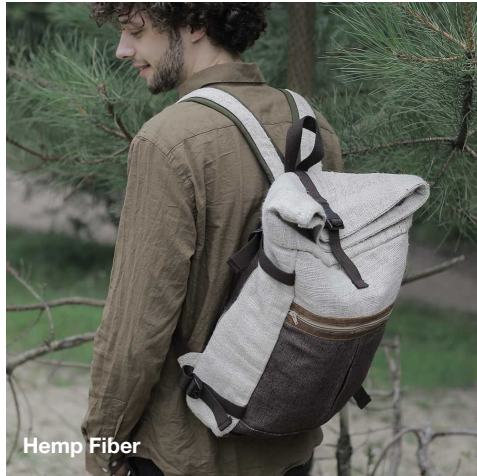


## Inspiration.

There are a lot of great companies out there that not only encourage sustainability, but are built upon a foundation of sustainable conduct. We admire their ability to utilize scrap and recycled materials in their production to provide functional and desirable solutions rather than adding to landfill.



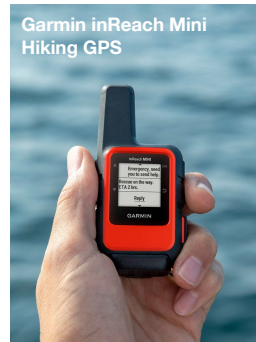
# A1 | Material Investigation



## Benchmarking.

Sustainability in materials has a range of implications. Some fabrics are made from natural materials such as Eucalyptus or Hemp and others are made from recycled materials such as polyester or PET. Looking into materiality, we prioritized environmental impact as well as durability.

# A1 | Outdoor Tech and Navigation Benchmarking



## Market Analysis.

Technology has found an unlikely home in the great outdoors. Essential safety measures, such as GPS navigation, and emergency communication signaling, as well as the desire to bring the comforts of the modern era into the backcountry, have informed a flourishing market of innovative, outdoor tech.

# A1 | Interviews and Insights



**Rosie Kovacs.**

Kovacs is a DAAP alum who, after graduating, co-founded a local furniture studio before leaving that to go found Sew Valley, a small run garment shop focused on sustainability and outreach. They have numerous certifications surrounding their minimal environmental impact, and have created a successful business while maintaining said minimal impact.



**Katie Minning.**

Katie is a DAAP alum who, after graduating, was hired on full-time at Fossil Group in Dallas, Texas on their men's leathers team. She is currently back in Cincinnati building out her own brand, Minn, of homegoods inspired by nostalgia.



**Sarah Parker.**

Sarah is an Ohio State University alum with a major in business and fashion and a minor in sustainability. She has experience with Zac Posen, and has worked with local startup fashion lines, including her own. She hopes to continue on her future career path applying sustainability to the fashion industry.



**Diana Meek.**

Diana is a DAAP alum who, after graduating, currently works for Victoria's Secret Packaging and has co-founded a footwear company, Holo Footwear, providing sustainable shoes at a reasonable price point. They will be launching this September and have been utilizing Instagram to document their processes and company goals.



**Braden Trauth.**

Braden is a DAAP ID alum who had spent most of his post grad career working in permaculture and educating others on it, as well as sustainable design. He goes on extended backpacking as well as camping and day trips.



**Ashley Kubley.**

Ashley is a full time faculty member of the Fashion Design Program at DAAP. She is interested in the implementation of sustainable practices in the apparel industry. Her work is geared towards bridging the gap between historical techniques and emergent fashion technology, particularly digital design methods and wearable technology.



## A2 | Persona

### The Eco-Adventurer

Loves to experience the outdoors whenever the opportunity arrives. Shops second-hand when they can and uses the products they currently own to their fullest potential. Wants to know the true impact of their purchases before they decide to buy. Purchases new product with quality and longevity in mind rather than keeping up with the newest versions. Enjoys the journey and all of the little moments that come along with it.

**Activity** | Backpacking, hiking, rock climbing, travel.

**Frequency** | 12+ times per year.

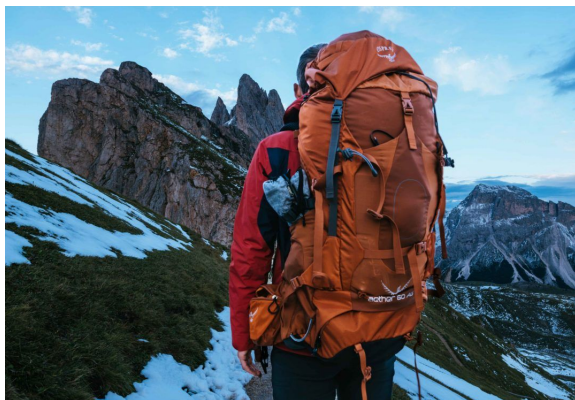
**Drivers** | Durability and longevity, sustainability, cost, ethics.



## A2 | Explored Directions

### Concept 1 | Backpacking Bag

Aims to produce an extremely durable and repairable pack made for avid backpackers. A one-time purchase, immortal bag that can be used for a lifetime.



#### Pros

- + Opportunity to create optimized system for specialized user.
- + Tackles planned obsolescence.

#### Cons

- Rugged durability will be difficult to achieve with sustainable and natural materials.
- Complexity and sheer size of bag pose design/remote work challenges.

### Concept 2 | Modular Add-Ons

Focuses on the sustainability of utilizing user's preexisting backpack. Adds the essential function and storage needed to turn any bag in a hiking pack, backpacking pack, or travel pack.



#### Pros

- + Encourages longevity of existing product rather than buying new.
- + Addresses financial sustainability.
- + Has multiple use case scenarios for each individual user.
- + Separate modules streamline repairability.

#### Cons

- Could lack cohesive design language.
- Complexity of end of life disassembly and recycling.

### Concept 3 | Day Pack

An affordable daypack made from plastic free bio-fabric that is environmentally friendly to produce. A simple design made to be an exploration of sustainable materials.



#### Pros

- + Simple design and construction allow for creative use of biomaterials.
- + Has multiple use case scenarios for each individual user.

#### Cons

- Less defined user and user scenarios means more abstract problem solving
- Complexity of end of life disassembly.

## A2 | Chosen Direction

### Concept 1 | Backpacking Bag

Aims to produce an extremely durable and repairable pack made for avid backpackers. A one-time purchase, immortal bag that can be used for a lifetime.



### Concept 2 | Modular Add-Ons

Focuses on the sustainability of utilizing user's preexisting backpack. Adds the essential function and storage needed to turn any bag in a hiking pack, backpacking pack, or travel pack.



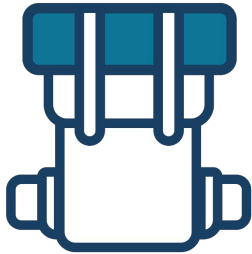
### Concept 3 | Day Pack

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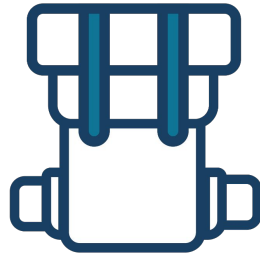
## A2 | Chosen Direction

A system of **modular packs** to augment an existing backpack, created by Patagonia in collaboration with several environmentally forward companies and materials experts.



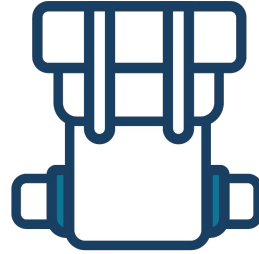
### Brain

Quick access storage area for grab and go items. Rain jacket, rain fly, toiletries, headlamp and snacks.



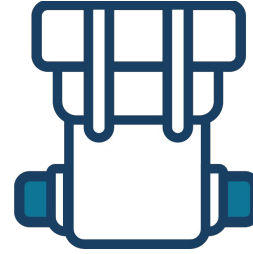
### Straps & Fixtures

Central strap provides essential infrastructure for attaching modules to any preexisting backpack.



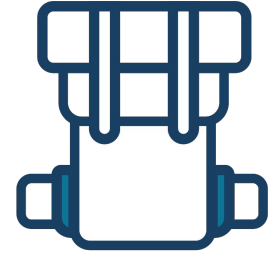
### Side pouch

Provide comfort and support to the hip belt. House quick access supplies like phone, knife and snacks.



### Hip belt

Connects to existing any preexisting bag with custom grommet system. Alleviates weight from the shoulders.



### GPS

Optional add-on device. Integrates seamlessly into system by sliding on the hip belt or tucking in side pouch.



## A3 | Brand and VBL



### Patagonia

Patagonia is the gold standard for outdoor and recreational gear, outerwear and soft good products. They are also a prime example of a sustainability-minded, socially-conscious company.

However, one of the major downfalls of the brand is the high price points of their product and the exclusivity that follows.

With our new product (universal, modular, storage add-ons for backpacking) we aim to lessen this disparity, making the outdoors more accessible for people of all economic backgrounds.

# A3 | Patagonia's Business Model

"Everything we make has an impact on the planet."

Patagonia considers themselves responsible for the current climate crisis and takes personal action to do better. They have built robust environmental and animal welfare responsibility programs to guide how their materials and products are produced. They ensure that their products are produced under safe, fair, legal, and humane working conditions. They also share information about their owned facilities and suppliers across the supply chain, so you know where and how the clothes you buy are made. **Full transparency is key.**



## We guarantee everything we make.

Because we know prioritizing durability results in consuming less energy, wasting less water and creating less trash.

[View Ironclad Guarantee](#)



## Know how your clothes are made.

Everything we make has an impact on people and the planet. Learn more about our environmental and social responsibility program.

[View Our Footprint](#)



## Keep your gear in play.

Buy used, trade in and fix your gear through Worn Wear.

[Visit Worn Wear](#)



## We give back for every sale.

We've pledged 1% of sales to the preservation and restoration of the natural environment.

[View 1% for the Planet](#)

## A3 | Materials Research



**Carnegie Fabrics /**  
Bio-Based Xorel



**Kintra Fibers /**  
Biodegradable Polyester



**Tencel /** Lyocell Padding



**Allbirds /** Recycled Plastic  
Nylon Straps



**YKK /** Sustainable Notions  
Line

# A3 | Materials Research



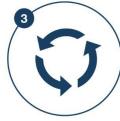
## Kintra Polyester

A soft polyester replacement derived from corn. Developed to be fully biodegradable and compostable.



## Bio-based Xorel

A tough, water resistant and structural fabric certified Gold by Cradle to Cradle. Manufactured w/ green energy and fully recyclable.



## NATULON Zippers

Developed by YKK to present a new standard in recycled notions. Manufactured using plastic waste found in oceans and waterways.



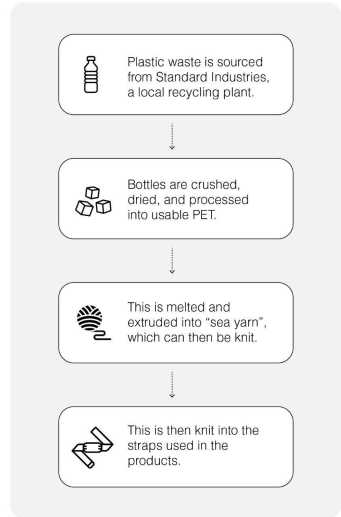
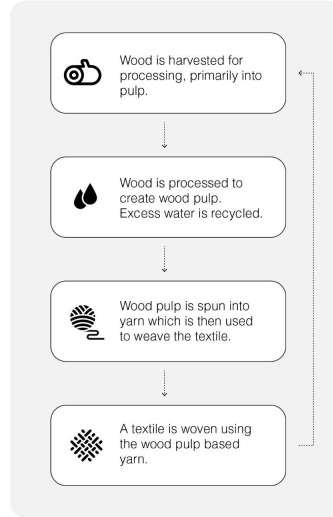
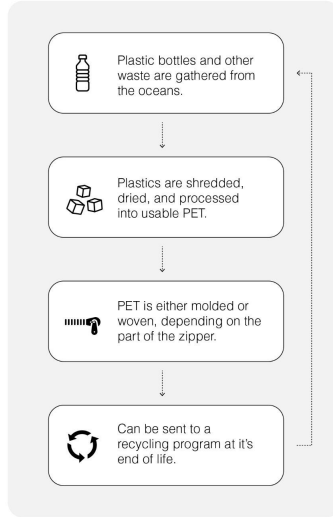
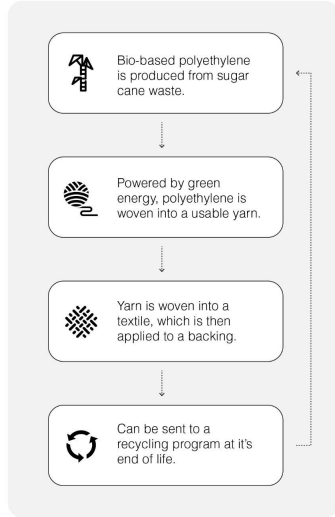
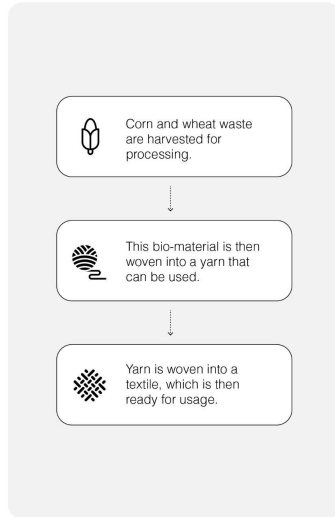
## Tencel Lyocell

Sourced from wood grown in South Africa. No artificial irrigation and fertilizers. A soft, padded and breathable material for the bags.



## Recycled Plastics

Following Allbirds' model, recycled bottles sourced from a recycling plant local to Patagonia will be used to create straps.



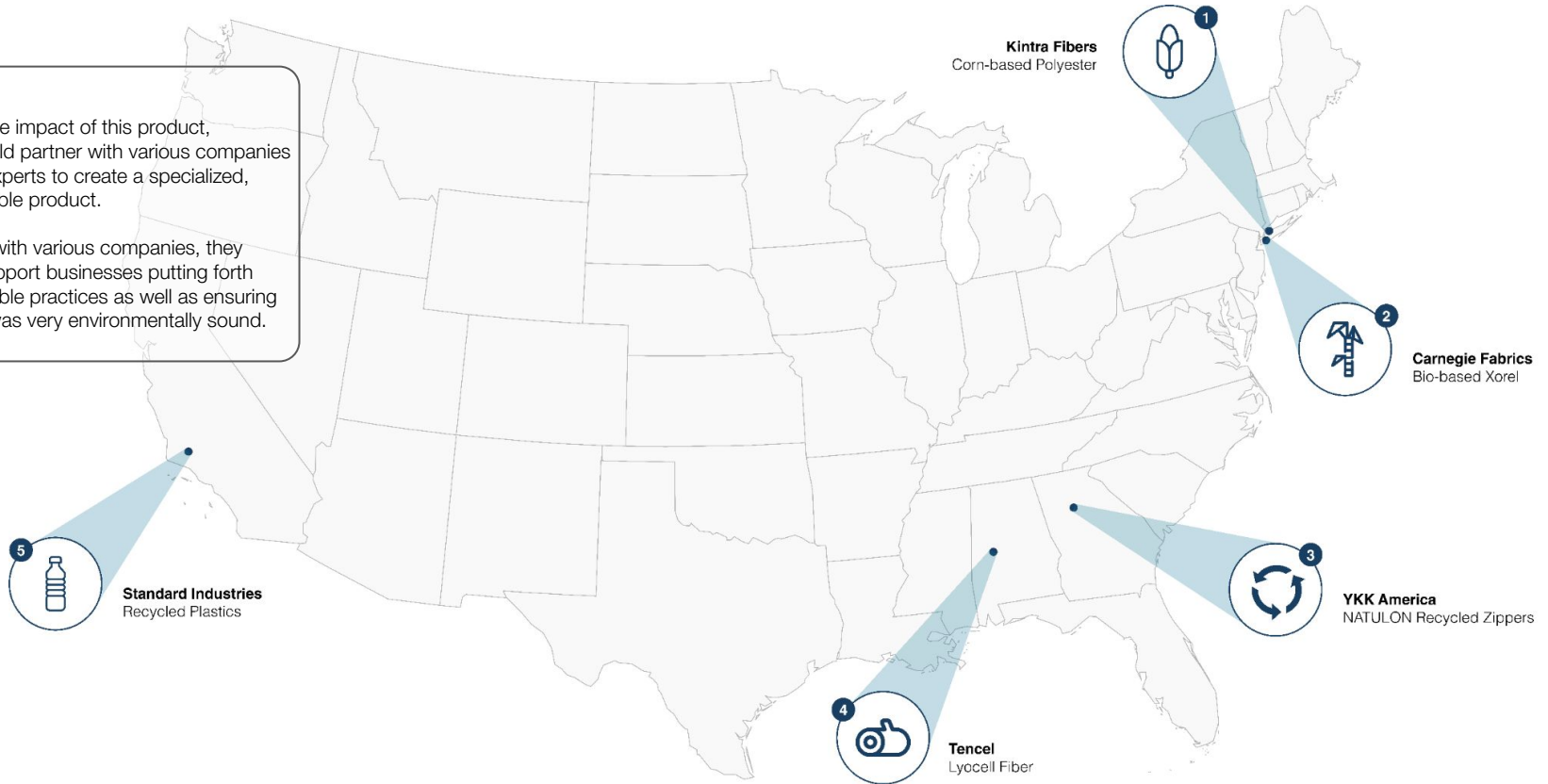


## A3 | Material Choices and Sourcing

### Partnerships

To maximize the impact of this product, Patagonia would partner with various companies and material experts to create a specialized, highly sustainable product.

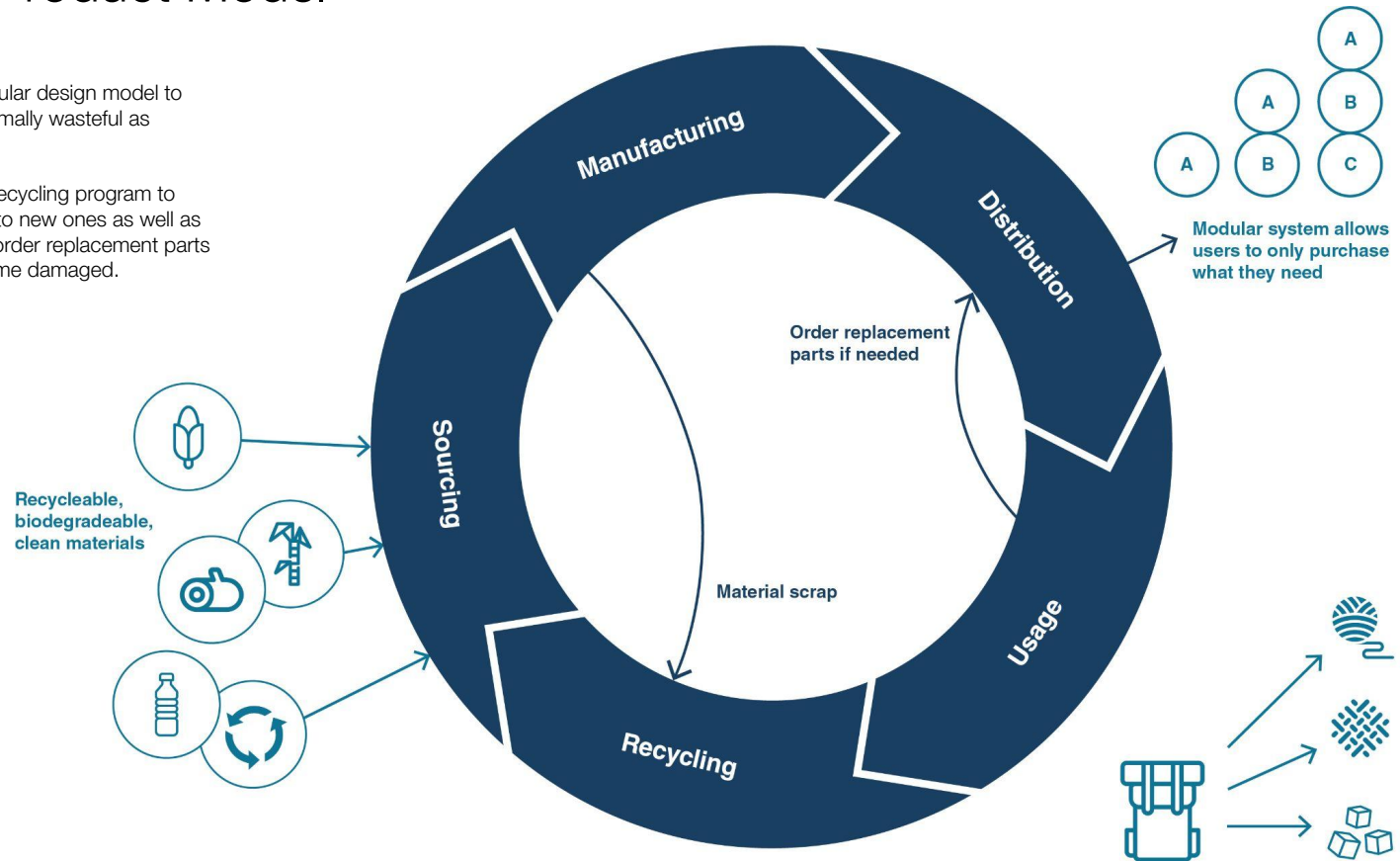
By partnering with various companies, they would both support businesses putting forth good, sustainable practices as well as ensuring their product was very environmentally sound.



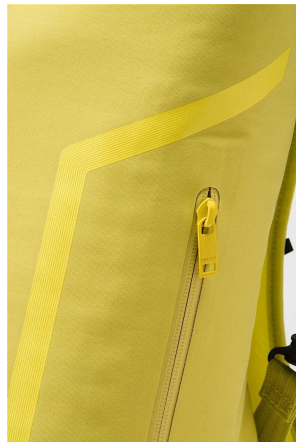
## A3 | Circular Product Model

This product will implement a circular design model to ensure that it is as clean and minimally wasteful as possible.

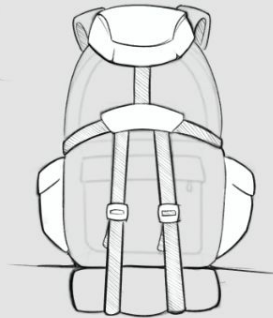
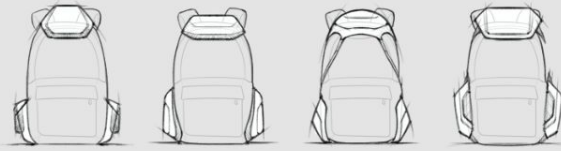
Patagonia will implement both a recycling program to collect and reprocess old bags into new ones as well as a clear avenue for consumers to order replacement parts / materials should their bag become damaged.



## B1 | Mood and Form Inspiration





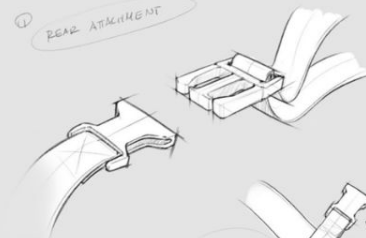


POCKET CONSTRUCTION:  
POCKET PATCHED ONTO  
SIMPLE HIPBELT, RINSET  
EFFECT



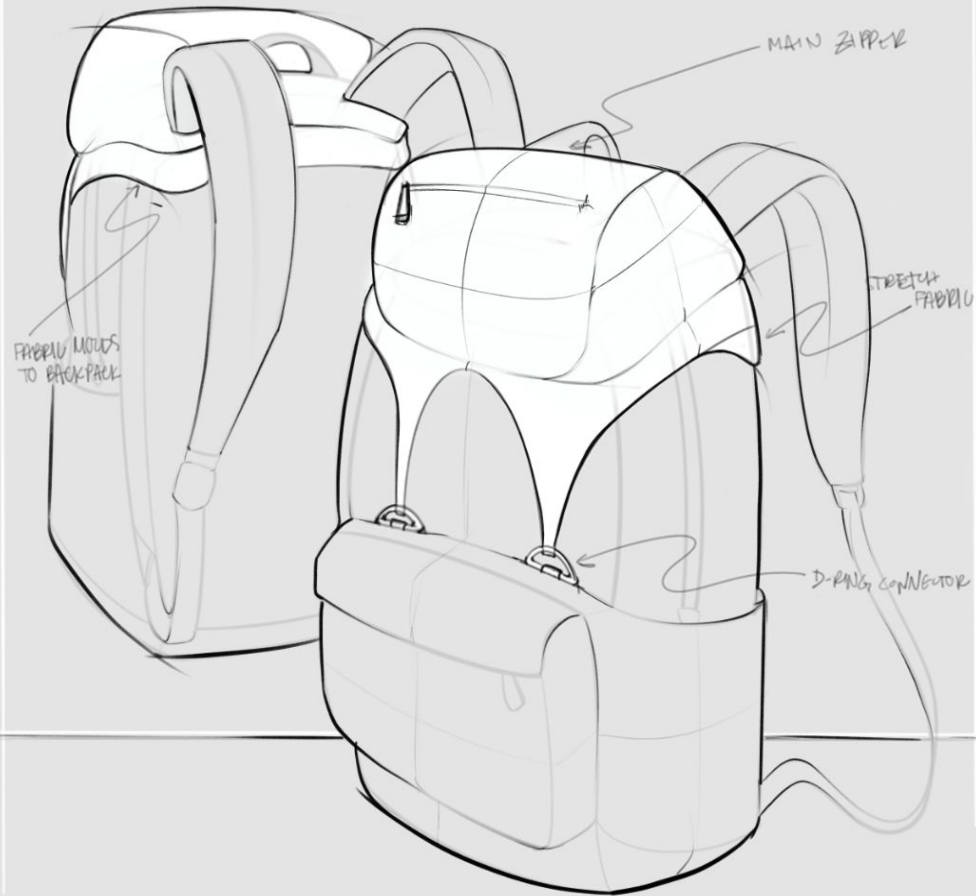
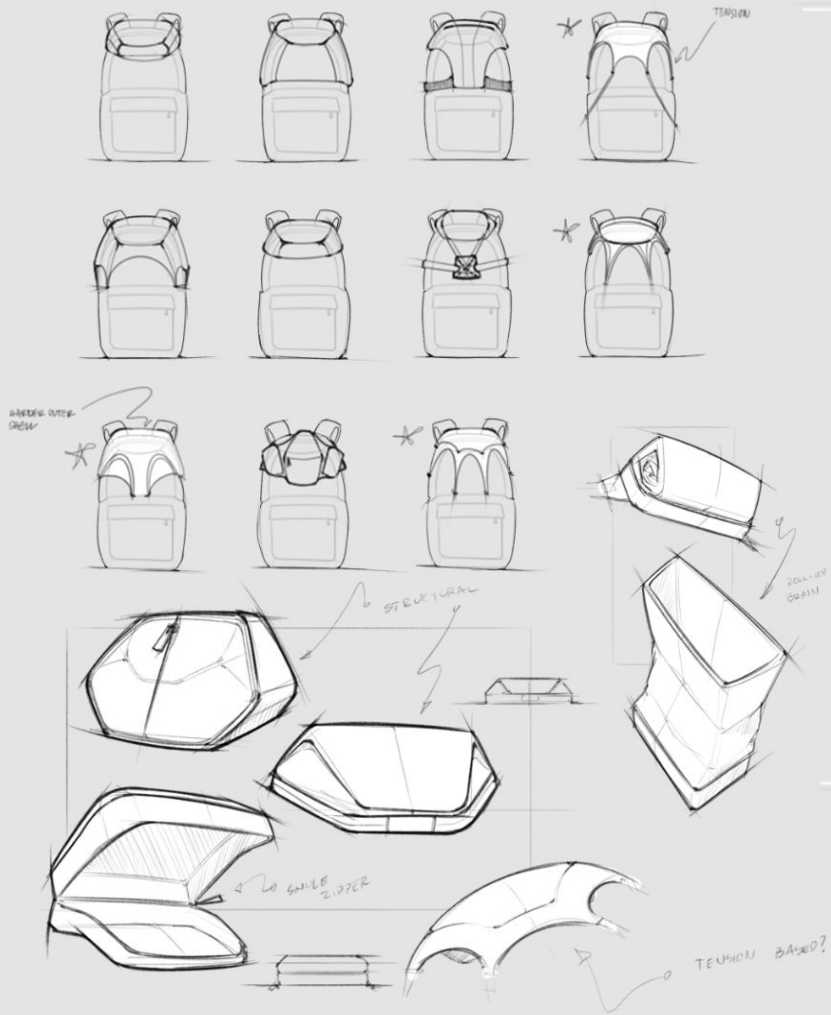
CENTRAL  
ATTACHMENT STRAP

① REAR ATTACHMENT

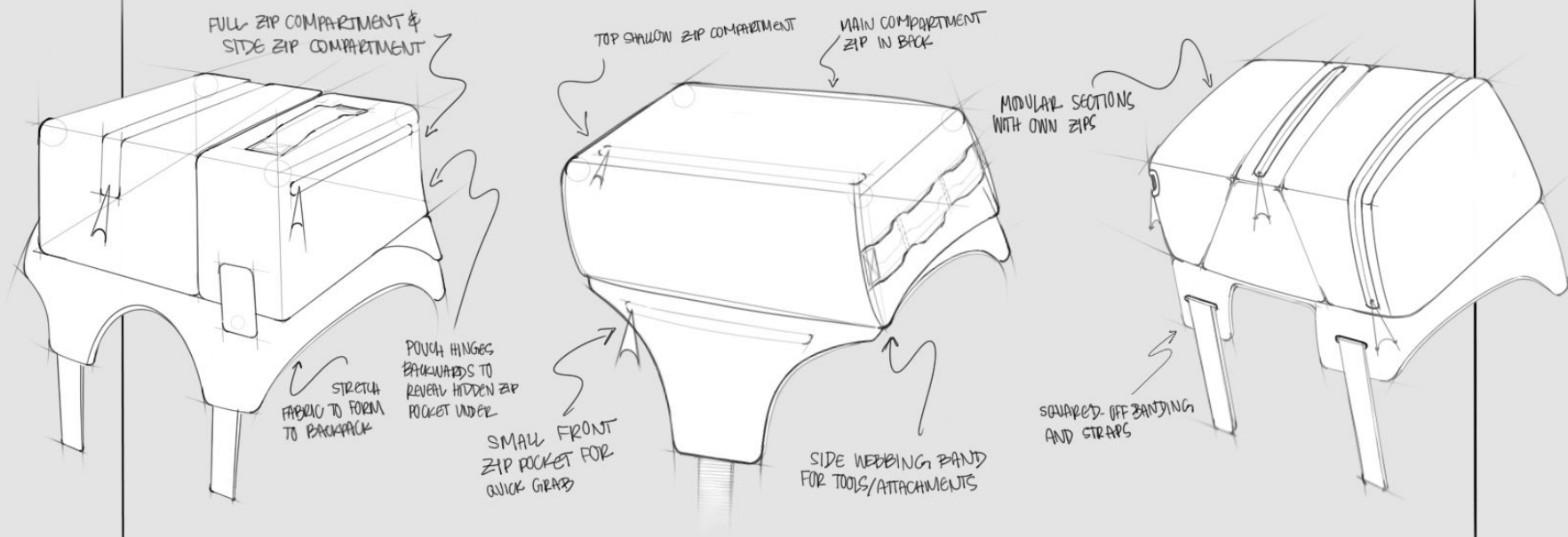


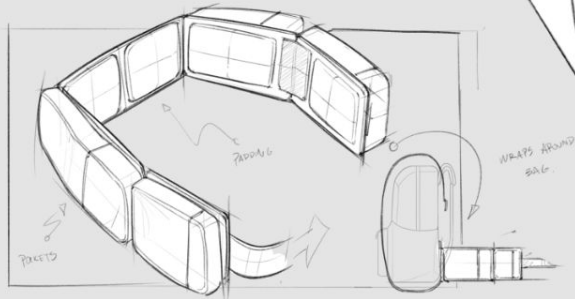
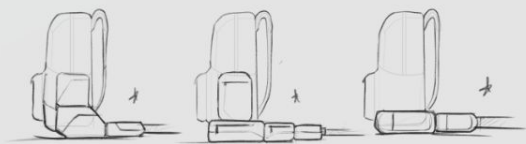
② ATTACHMENTS  
SLIDE ON





# BRAIN FORM STUDIES



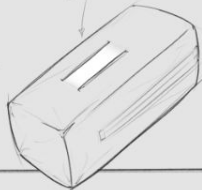
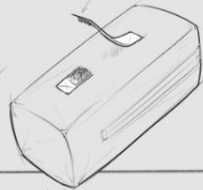
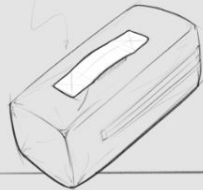


## ATTACHMENT

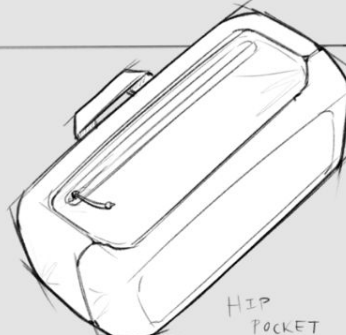
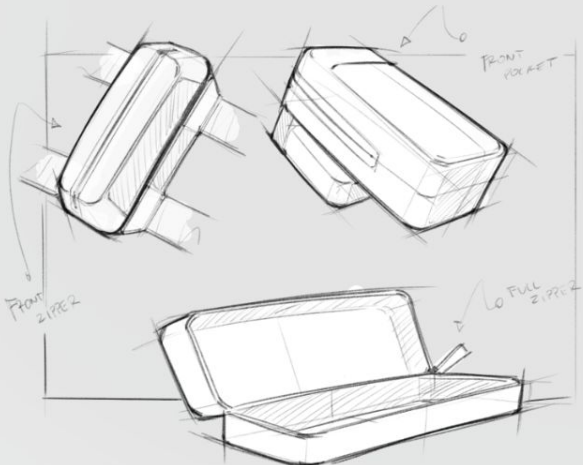
① SHIRL SEWING LOOP

② VELCRO

③ LUTABAY SNAP



Possible Attachment Methods

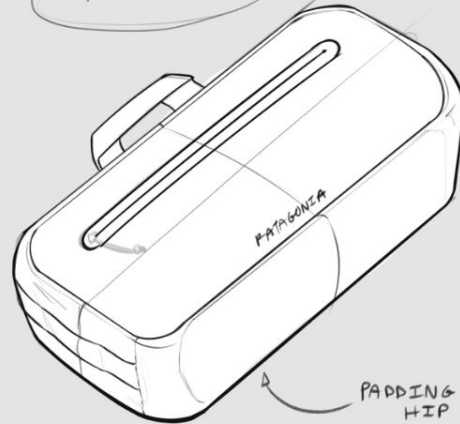


# MODULAR BAG IDEATION

SMALL

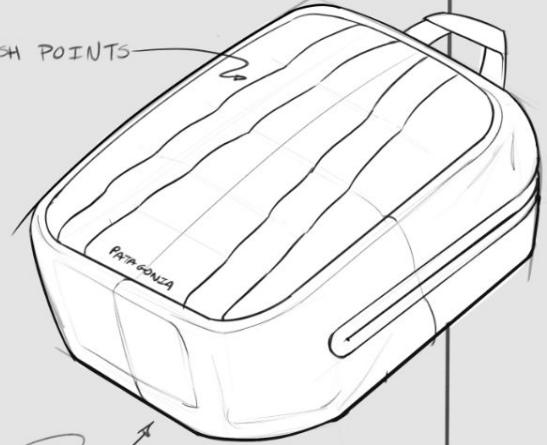


MEDIUM



LARGE

LASH POINTS



PADDING FOR  
HIP BELT

STRAP FOR  
SIDE POCKET

GPS FORM STUDIES

① VERY RUBBED

→ HANDLE

CLIP ATTACHMENT

FRONT  
SCREEN?

SIDE  
BUTTONS

② GEOMETRIC

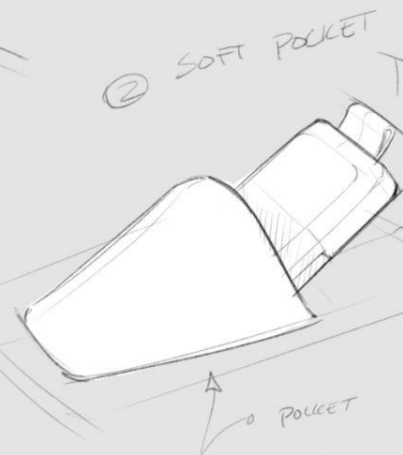
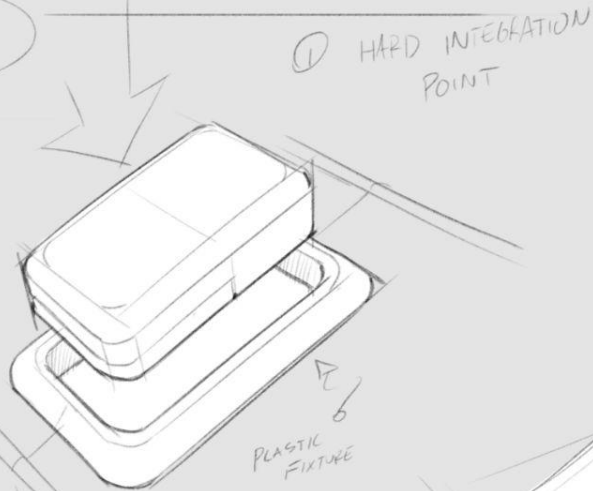
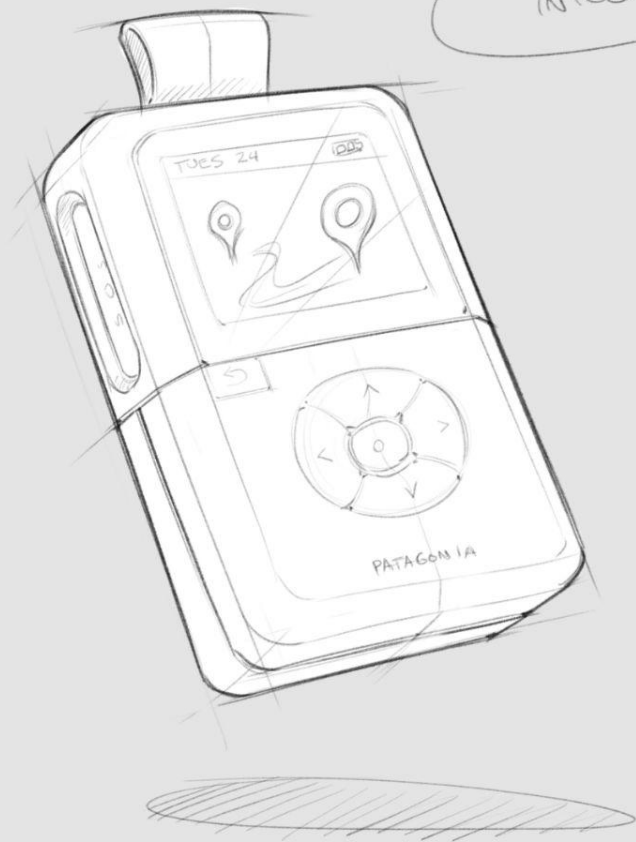
③ SUBTLE

STRAP?

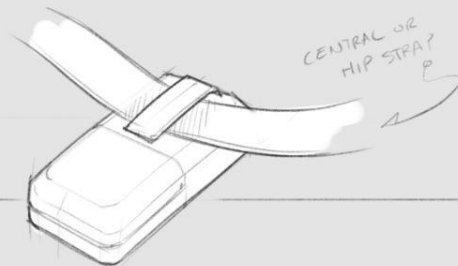
TUBE FORM  
LANGUAGE

BOTTOM BATTERY/  
CHARLE AREA

"PULIC"  
STYLE



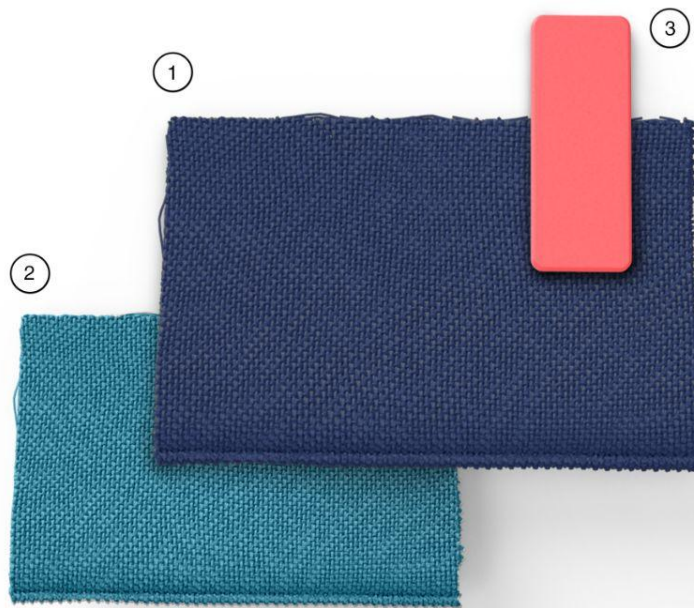
③ STRAP CLIP







## B2 | Chosen CMF

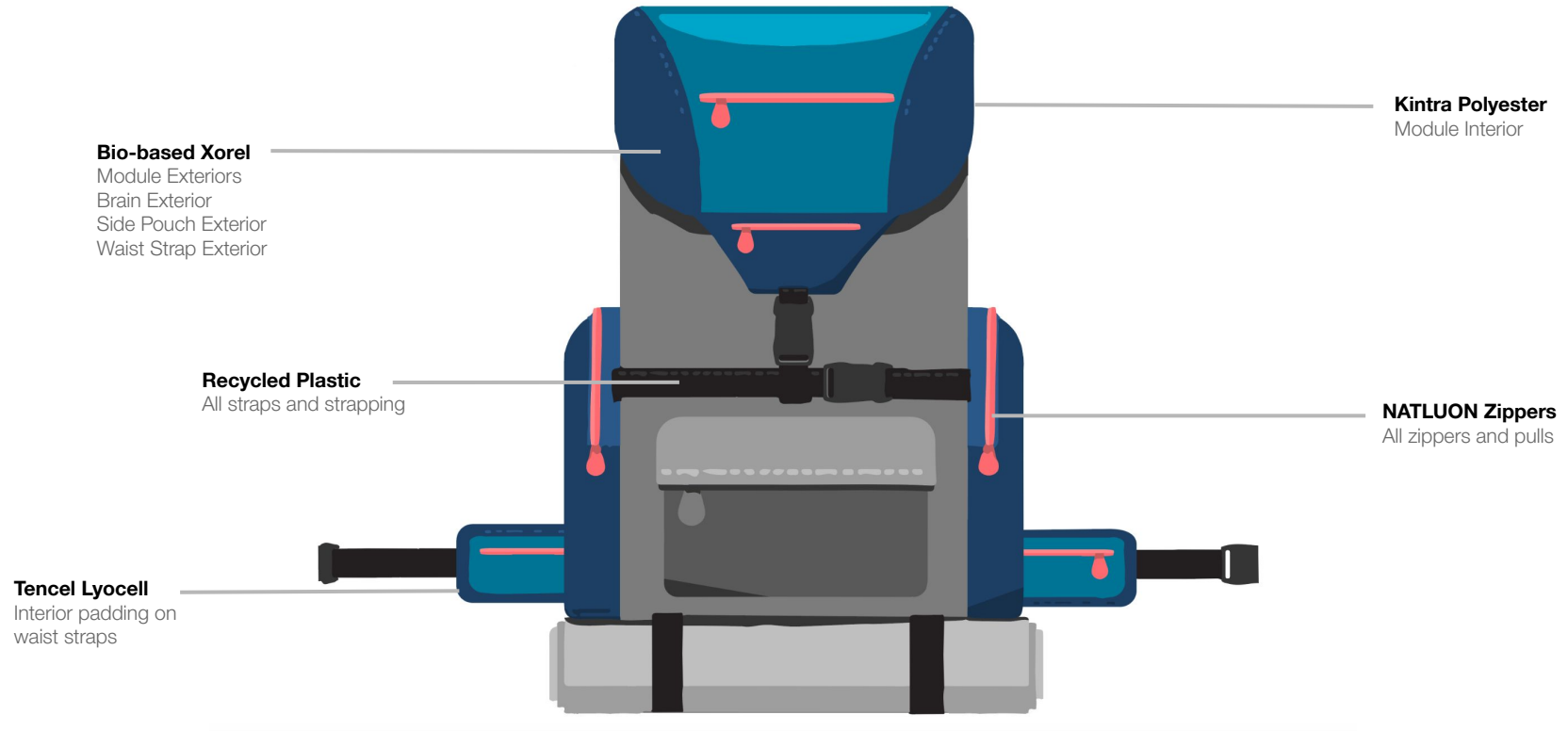


1  
PANTONE®  
19-4119 TSX  
Blueberry Pancake

2  
PANTONE®  
18-4331 TSX  
Stunning Blue

3  
PANTONE®  
16-1663 TSX  
Siesta

## B2 | Material Application







# Modular Wear.

Part of the Worn Wear Initiative.

patagonia





## Patagonia Modular Wear

Born out of several partnerships with environmentally-forward companies and manufacturers across the United States, the Modular Wear family offers a new way to hike.

Leveraging your existing backpack and sustainably sourced and produced modular packs, the system works to augment what you already have - allowing for a sustainable and ethical way to get out there, all at a much lower price point.

**patagonia**

# Mod it.

Meet the newest addition to  
the Worn Wear family.

patagonia®



patagonia®

Large Pack

Trail GPS

Brain Pack

Small Pack

Hip Pack







## Modular Wear Strap System

80" of strap webbing, 2 grommets, 1 buckle

In the central configuration, the strap system can wrap snugly around the midsection of any preexisting backpack and provides essential infrastructure for attaching storage modules.

In the hip configuration, the strap system can be integrated into any preexisting backpack using custom grommets and provides a hip belt, alleviating weight from the shoulders and making the bag easier to carry.



## Modular Wear Strap System / Central Configuration

Tightened around the center of the backpack, this configuration allows for the user to add modular bags onto the midsection of their backpack.



## Modular Wear Strap System / Hip Configuration

Installed using the included grommet tool, this configuration allows the straps to function as a hip belt, making their bag easier to carry.



## Modular Wear Grommet Tool

1 Grommet Tool

Made to be shared, the grommet installation tool is a sturdy device made from cast metal. It aids in the installation of the waist strap. Simply position over the grommets, one on the inside on your bag and one on the outside. With a squeeze the grommets are locked in place in a corner. Repeat for each corner.

Included with each tool is a return shipping label. If properly returned, the sender will receive a coupon for their next Patagonia Modular Wear purchase.



Grommet tool mid-installation.





All bags slide onto straps with integrated fabric loops.





## Modular Wear Small Pack

5"L x 2"W x 6"H

The small pack can be added onto the Modular Wear strap system or connected via carabiner anywhere on an existing bag. Its small size makes it ideal for items that need to be quickly grabbed without sifting through a larger pack, small knives, sunscreen, first aid materials and more.



## Modular Wear Hip Pack

10"L x 2"W x 4"H

The hip pack is made to be strung onto the hip strap system configuration. With the added mesh padding on the back of the pack, the hip belt is not only comfortable but able to carry all your small quick access essentials. Phone, wallet, keys, and of course small snacks.





## Modular Wear Large Pack

7"L x 3"W x 10"H

The Large Pack can be added onto the Modular Wear strap system or connected via carabiner anywhere on an existing bag. It is perfect for larger everyday access items. Cooking gear, fire starting materials, and more.



## Modular Wear Brain

10"L x 7"W x 5"H  
(not including front flap)

The Brain is built for quick access needs. It connects onto the Modular Wear Strap System via a front buckle as well as looped webbing straps in the back to keep it secure from all sides. It utilizes three separate zippered compartments to keep your belongings organized and has webbing strategically located on the sides and along the center front to allow for attachments, carabiners, and more. Comes with receiving end of buckle on looped webbing to attach to central webbing band.

Front strap clips onto central strap.

Rear strap loops thread onto central strap between shoulder straps of backpack.





## Trail GPS

3 x 5 x 1.75"

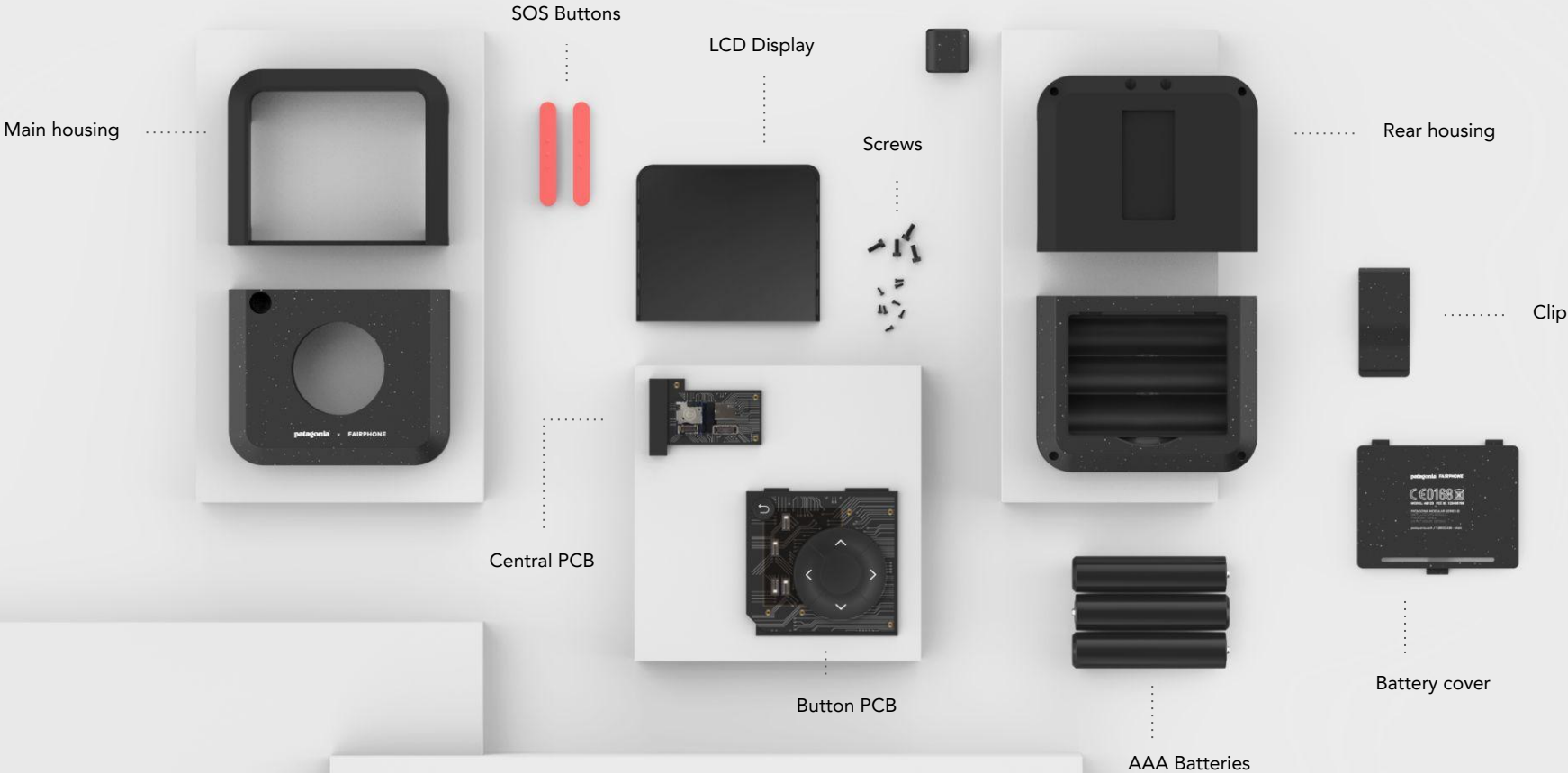
A companion tool for any hiker. Created with a partnership with [Fairphone](#), to establish a new baseline for a responsibly created portable GPS.

Hooked into satellite GPS networks, it can provide life saving navigation to those in need, as well as provide an avenue for communication when standard cellular devices are non functional.



GPS easily slides onto straps.







## Modular Wear Small Pack

Berry Mix | \$14

BRMX Style No. 4044003



One Size Fits All | [Size & Fit Guide](#)

Add to Bag

[Browse Used Packs & Gear](#)



## Modular Wear Hip Pack

Berry Mix | \$14

BRMX Style No. 4044002



One Size Fits All | [Size & Fit Guide](#)

Add to Bag

[Browse Used Packs & Gear](#)



## Modular Wear Large Pack

Berry Mix | \$24  
BRMX Style No. 4044001



One Size Fits All | [Size & Fit Guide](#)

Add to Bag

[Browse Used Packs & Gear](#)





## Modular Wear Brain Pack

Berry Mix | \$28

BRMX Style No. 4044004



One Size Fits All | [Size & Fit Guide](#)

Add to Bag

[Browse Used Packs & Gear](#)

## Modular Wear Strap Set

Black | \$9

BRMX Style No. 4044000



One Size Fits All | Size & Fit Guide

Add to Bag

Browse Used Packs & Gear



# Customize your hike.

No hiking bag? No problem.  
Create your perfect hike with Modular Wear.

**patagonia**

