



SCOUT BSA APPAREAL COLLECTION

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PROJECT OVERVIEW

The foundation of Scouts BSA is based on the mission to prepare the youth (ages 11-18) to make ethical and moral choices by teaching values of the Scout Oath and Law that reads thus:

Scout Oath: On my honor I will do my best to do my duty to God and my country and to obey the Scout Law; to help other people at all times; to keep myself physically strong, mentally awake, and morally straight.

Scout Law: A Scout is trustworthy, loyal, helpful, friendly, courteous, kind, obedient, cheerful, thrifty, brave, clean, and reverent.

These simple values have been passed on and adapted by new generations of scouts who inspire others after them. In February of 2019, Scout BSA reached a milestone by embracing inclusivity and allowing young women to join Scouts creating an opportunity for these youth to work together to become good people and strong leaders.

The Scouting uniform is more than just an article of clothing that is associated with the Scout BSA Organization. It acts as a canvas that is painted on by troop patches and awards by the scout. It represents the hard work that each of them has put themselves through; every knot tied, tent assembled, good deed done etc. Not one uniform is the same and tells its own unique story of the scout's journey. It has a long history and give the wearer a sense of pride whether if they are following the steps of family before them or being the first of their generation to join Scouting. The uniform is the physical embodiment of the Scout Oath and Law and just how the Scout Oath and Law are adapted by new generations of Scouts, the uniform needs to adapt to the needs of these young leaders. There is an opportunity to update the uniforms to versatile, equitable and functional for the new generation of young male and female scouts desiring to be their best selves.

Scouting has deep roots in outdoor activities such as camping, and hiking and use them as tools to teach scouts leadership, ethics, teamwork, and self-confidence that carry on into adulthood. For many, scouting is their first introduction to the great outdoors and influences their healthy living habits. With Scouting's deep appreciation for the outdoors, one would expect high performing BSA branded products available to its members. Unfortunately, this is not the case as their selection of hiking outwear for adolescent male and females is barren, leaving a missed opportunity to create a high-performance and light weight hiking garment designed for these young scouts who want to push themselves to be efficient hikers.

This missed opportunity is not only within Scouting but throughout the sports industry. Adolescents are treated as small adults resulting in many products shrunken down silhouettes designed for adults. This is approach is not inclusive due to the rapid physiological and mental changes that adolescents experience, impacting skill and performance. There is a product opportunity to design for active adolescents in the outdoor space as they transition into adulthood and growing their passion of the outdoors. This project will focus in on an inclusive Scouting apparel collection consisting of male and female uniform tops, bottoms, an ultralight hiking

jacket and headwear. The collection will focus on inclusivity through thermoregulation, flexibility, and fit.

PRODUCT CLASSIFICATION

Unisex Apparel collection consisting of Uniform long sleeve top and Convertible hiking bottom, Outerwear Hiking Jacket, and a Five Panel Hat) for Adolescent male and female Scouts

HISTORICAL RESEARCH:

History of Scouts BSA

Scouts BSA formerly known as Boy Scouts of America was established in 1910 but its roots span across the Atlantic in 1899 England with the publication of Robert Baden-Powell's military manual *Aids to Scouting*. This manual was written for British militia that taught lessons on tracking, observation and organized elaborate games (History.com Editors, 2009). To his surprise, his teachings caught the attention of young boys prompting him to begin writing *Scouting for Boys*, a non-military field manual for this younger audience that would focus on good morals and deeds. To prove his ideas, he decided to take a group of 21 boys out for a camping trip to Brownsea Island for 14 days where he taught many skills and values such as camping, observation, woodcraft, boating, lifesaving, leadership, patriotism, and chivalry (History.com Editors, 2009). The camp and the publishing of the book was a success; opening an opportunity for Baden-Powell to create an organization based on the skills and values taught at the camp.

By the end of 1908, there were 60,000 Boy Scouts in countries ruled by the British Commonwealth and in September of 1909, 10,000 boy scouts along with the first Girl Scouts gathered at the Crystal Palace in London to attend the first national Boy Scout meeting. In the same year, William Boyce a Chicago publisher visiting London became lost in fog and encounters a Boy Scout who guides him to his destination. Boyce, moved by the scout's deed and generosity inspired him to establish the first Boy Scouts of America troops on February 8th, 1910, by combining already established youth groups such as the Woodcraft Indians and the Sons of Daniel Boone (History.com Editors, 2009). Due to the growing popularity of scouting across the globe, Baden-Powell established the Wolf Club (Cub Scouts in the U.S) for boys under the age 11 that would eventually transition to the Boy Scouts.

In 1920, the first international Jamboree was held in London to celebrate the 10th anniversary of the camp that was held on Brownsea Island. 8,000 Scouts from around the globe gathered to participate in competitions to test the mind, body along with fostering friendships with other scouts with diverse backgrounds. It was here where Baden-Powell would become the Chief Scout of the world. These Jamboree's would continue to be held in different parts of the world every 4 years (History, n.d.).

Scouting would continue to grow adding on Venturing, Sea Scouts, Exploring and STEM Scouts as opportunities for youth to participate including women. However, the main scouting program remained for boys only making females ineligible for the Eagle Scout ranking.

Within the BSA, there are different 7 rankings that scouts can earn through the completion of certain merit badges and leadership requirements. It starts with Scout following Tenderfoot, Second Class, First Class, Star Life and Eagle. Eagle Scout is the highest rank that can be achieved with only 8% reaching this milestone (Eagle Scouts, 2019). The very first Eagle Scout was 16-year-old New Yorker Arthur Rose Eldred in 1912. Many would walk in his footsteps such as Edgar Cunningham who would become the first person of color to earn the rank of Eagle in 1926 along with big names such as Neil Armstrong, Steven Spielberg.

Although Robert Baden Powell passed away in 1941 the values and lessons, he taught would be embraced by 130 million young men and women (About BSA, 2021). There are currently 2.2 million youth members, 140,000 of them girls that currently active in Scouts BSA (History, n.d.).

Girls and Scout BSA

From the start, girls showed interest in Robert Baden Powell's teachings and wanted the opportunity to learn what the boys were being taught. This interest was showed when a group of girls showed up at the first Boy Scout Rally claiming themselves to be girls' scouts (not related to the current Girl Scouts organization). From the very beginning, young women recognized they were just as capable to take on the challenges and task the boys were being taught. However, male leadership at the time were afraid that if girls and boys were mixed in together for the same activity, it would make the organization less masculine and turn off young men from joining Scouts (Hosking, 2017). In response to this interest, Powell and his sister formed the Girl Guides in 1909 where girls were able to do similar activities as the boys did along with a curriculum of traditional teachings that an Edwardian society expected of a woman (Amundson, 2017). In the United States, Juliet "Daisy" Gordan Low would kickstart the first Girl Guides in the country after working for Girl Guides in Britain. She believed that girl deserved to the same opportunity to develop physically, mentally, and physically. This would eventually become what is known today as the Girl Scouts.

For a long time, boys and girls were in their own separate groups resulting in friction. In the 1920's the Boy Scout's sued the Girl Scouts over the word Scout because they believed it was a more masculine term. (Hosking, 2017). However, in 1971 Boy Scouts of America opened the Exploring branches (Venturing & Sea Scouts) to girl membership. Within 4 years, 20% of Exploring members were female and would grow to 40% over the next few decades (Wyman, 2019). However, the core program of the Scouting organization remained boys only preventing girls from receiving the Eagle award.

This opening to inclusion for females into the Scouting Organization led to the dropping "boy" from the name and unofficially rebranding to "Scouting USA" in 1977 This was very short lived as during the 80's the word "boy" made its way back into the organization (Wyman, 2019). Finally in February 2019, girls were allowed to join all of scouting and giving equal

opportunity to earn the Eagle Scout Award. The Rank of Eagle is a very difficult and time-consuming task to complete, especially for Scouts who join closer to 18 years of age. Many had to create plan along with some time extensions due to the COVID-19 pandemic to complete all the requirements. Despite these disadvantages, in February 2021, Junior Isabella Tunney along with 1,000 others would become the first generation of female Eagle scouts. (AP News, 2021). Along with the 2019 policy change, Boy Scouts of America was officially renamed to Scouts BSA.

Scout BSA Uniform History

The Scout BSA uniform mainly consist of a tan cotton button down collared shirt with forest green pants or shorts and can be accessorized with a neckerchief, and a sash filled with merit badge patches. This uniform is very recognizable and embraces the individuality of the Scout and comradeship within their troop. These simple uniforms have a long history beginning in 1908. The first uniforms were designed Robert Baden-Powell who was inspired by existing uniforms worn by the Church Lads Brigade, Boys Brigade and Cadet Corps (Heritage Scouts, 2018). With the growing popularity of Scouting, Baden-Powell devised uniform requirements to create a garment that would be synonymous to the organization. He didn't see the uniform just as an outfit to look professional, it demonstrated that a boy can not only be clean, smart, and active, he can be dependable and trusted to do his best. Many of these requirements still influence uniforms aesthetic.

The following shows a timeline of the evolution of the Scouting uniform according to the official heritage scouts' website (Heritage Scouts, 2018):

1909:



- ❖ Flat brimmed hat or wide-awake hat.
- ❖ Loosely handkerchief around the neck
- ❖ Flannel shirt
- ❖ Colored ribbons representing patrol on the left shoulder
- ❖ Belt, Haversack, Shorts cut short at the knee
- ❖ Stocking with green braided garters
- ❖ Boots or Shoes
- ❖ Staff as high as scouts' shoulder

Figure 1: Scouting Un.form 1909
(heritage.scouts.org, 2018)

1911: Uniform requirements were made to differentiate them from military organization

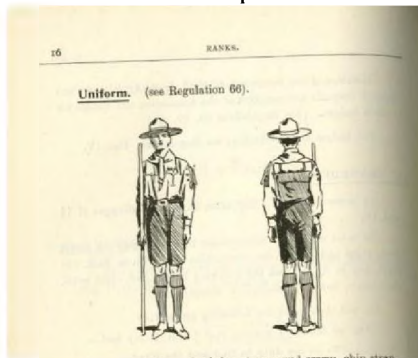


Figure 2: Scouting Uniform 1911
(heritage.scouts.org, 2018)

- ❖ Khaki color flat brimmed w/ chin strap
- ❖ Loosely knotted colored neckerchief associated with troop
- ❖ Blue, khaki, or grey button-down shirt w/two patch pockets
- ❖ Shorts that are blue or Khaki
- ❖ Brown leather belt approved by headquarters
- ❖ Dark colored or khaki stockings with green garter
- ❖ Brown or black shoes/boots
- ❖ Female scouts adapted male uniform based on their needs

1967: Implementation of the Advanced Party Report (APR)

In 1964 The Chief Scout's Advance Party was formed to review all aspects of Scouting including the uniforms. It would review female uniforms every 3-4 years and all other uniform every 6-8 years. The uniform and headwear were to be worn on formal occasions while normal wear would be allowed based on the activity. Head wear would later be dropped in 1989. Changes also consisted of mushroom-colored trousers, beret replaced the full brimmed hats, and shirts changed to green.

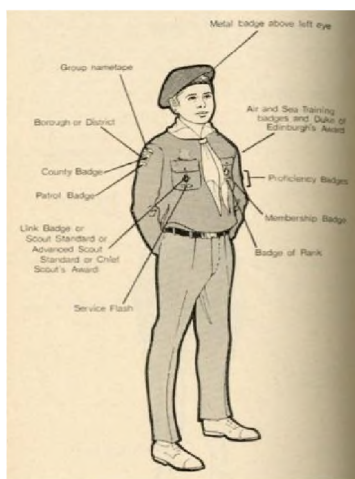


Figure 3: Scouting Uniform 1967
(heritage.scouts.org, 2018)

1978: BSA reaches out to famous Dominican fashion designer Oscar de la Renta to design new uniforms. His redesign focused on creating a uniform that was comfortable, durable while keeping the iconic Scout silhouette. His design is still used today (Scouting Wire, 2015).



- ❖ Khaki tan shirts
- ❖ Colorful epaulets,
- ❖ Olive green pants with utility pockets,
- ❖ Baseball-style caps were chosen in lieu of visored hats
- ❖ Red and green socks instead of stockings and green garters
- ❖ Shoulder loops to show scouts program
- ❖ Polyester and cotton are used for durability

Figure 4: Scouting Uniform 1978
(Scouting Wire, 2015)

2002: Another review is done that gathered feedback on the uniform. They found that scouts also wanted clothing that had a contemporary look and feel but still was durable. Poly-cotton apparel was added into the collection such as sweatshirts, fleeces, and hats with minimal branding to allow for customization with patches and badges.



Figure 5: 2002 Uniform (heritage.scouts.org, 2018)

OFFICIAL UNIFORM POLICY

The Scouts BSA views their uniforms not just as a professional outfit worn at scouting event. It represents equality, identification, achievement, and commitment. All uniforms must be approved and distributed by the Scouts BSA. Uniforms are used primarily for scouting activities

and events cannot have any alterations or additions that are not approved. During events, scouts can go through a uniform inspection to ensure that the scout appearance follow the guidelines. The check list consists of the following:

Scouts BSA Uniform Inspection Sheet
 Official Placement of Insignia
 Conduct the uniform inspection with someone aware of the basic rules in uniform.

Merit Badge Sash
 1 pt. Correctly worn (badges are attached to sash and back, if needed)
 Badges are visible on both sides
 Badges are arranged in order of rank

Shoulder Epaulets
 2 pts. Correctly worn (epaulettes are attached to the uniform)
 Epaulettes are arranged in order of rank

Right Sleeve
 1 pt. All the uniform components (if any) are attached to the sleeve
 All the uniform components (if any) are arranged in order of rank

Left Sleeve
 1 pt. All the uniform components (if any) are attached to the sleeve
 All the uniform components (if any) are arranged in order of rank

Right Pocket
 2 pts. Official or official insignia (if any) are attached to the pocket
 Official or official insignia (if any) are arranged in order of rank

Left Pocket
 1 pt. Official or official insignia (if any) are attached to the pocket
 Official or official insignia (if any) are arranged in order of rank

Total Inspection Score
 0-10 pts.

Scouts BSA Uniform Inspection Sheet
 Uniform Inspection
 Conduct the uniform inspection with someone aware of the basic rules in uniform.

Scouts BSA Handbook
 1 pt. The Scout BSA Handbook is a consistent part of a Scout's uniform.

General Appearance Allow 2 points for each:
 1 pt. Clean and neat
 Clean and neat
 Clean and neat

Headgear All troop members must wear the headgear chosen by vote of the troop.
 1 pt. Headgear is worn correctly

Shirt and Neckwear Official shirt or official long- or short-sleeved uniform shirt with proper shoulder insignia is required. The troop may wear a neckerchief, but not an neckerchief or neckerchief. When at meeting the neckerchief must be worn under the collar or under the open collar in any case, the top button of the collar should be unbuttoned and the shirt must be tucked in.
 1 pt. Official neckerchief is worn correctly

Pants/Shorts/Short Roll-up Pants Official pants or official uniform pants or shorts are required. The troop may wear pants or shorts that are not official. When at meeting the pants must be tucked in and the shirt must be tucked in.
 1 pt. Official pants or shorts are worn correctly

Belts Official Scout BSA belt, web or leather, as selected by members of the troop, all troop members wear the same style of belt.
 1 pt. Official belt is worn correctly

Socks Official socks with official stripes, plain, roll-up pants, or short, lettering on the side, are acceptable.
 1 pt. Official socks are worn correctly

Shoes Leather or canvas, neat and clean.
 1 pt. Official shoes are worn correctly

Registration Current membership card and temporary certificate are present.
 1 pt. Current membership card and temporary certificate are present

Insignia Current placement: left pocket, 3 points; right pocket, 2 points; left sleeve, 1 point; right sleeve, 1 point; merit badge sash, 1 point; shoulder epaulettes, 1 point.
 1 pt. Official insignia are worn correctly

Total Uniform Inspection Score
 0-10 pts. (Total score is 10 pts.)

Total Uniform Inspection Score
 Name: _____ Date: _____
 Our call inspection will be held on _____
 Bring this form with you.

Figure 6: Scout BSA Inspection Sheet (Scouting.org, n.a)

General Appearance

- ❖ Good posture

- ❖ Clean face and hands
- ❖ Combed hair
- ❖ Neatly dressed
- ❖ Clean fingernails

Headgear

- ❖ Chosen by troop (Guide to Awards and Insignia, 2018)

Shirt & Neckwear

- ❖ Official short or long sleeve shirt
- ❖ Green/Red shoulder loops on epaulets
- ❖ Troops can vote to wear neckerchief w/slide, bolo tie or no neckwear (Guide to Awards and Insignia, 2018)
- ❖ Troops can also wear the neckerchief over the turned-under collar or open collar
- ❖ Top button of collar is unbuttoned, and shirt is tucked in



Figure 7: Scout BSA Official Shirt, Neckerchief & Slide (Scoutshop.org, n.d)

Pants/Short/Skort/Roll-up Pants

- ❖ Official pants or shorts. Female scouts can select olive skort or roll-up pants (Guide to Awards and Insignia, 2018)



Figure 8: Scout BSA Official Pants, Shorts, Rolled Pants & Skort (Scoutshop.org, n.d)

Belt, Socks & Shoes

- ❖ Shoes appropriate for the event
- ❖ Official BSA belt, leather or web that is chosen by the troop
- ❖ Official long or short socks that are worn with the bottoms



Figure 9: Scout BSA Official Buckle, Belt & Socks (Scoutshop.org, n.d)

Right Sleeve Insignias

- ❖ U.S flag emblem is center in below shoulder seam
- ❖ Journey to Excellence worn below patrol emblem or National Honor Patrol Star (Guide to Awards and Insignia, 2018)
- ❖ Musician badge (only if in band) worn ½ in below patrol emblem (Guide to Awards and Insignia, 2018)

Left Sleeve Insignias

- ❖ Council shoulder emblem unit number and veteran unit bar are placed close to each other
- ❖ Veteran unit bar is placed above and touching troop number & council emblem
- ❖ If left sleeve has a pocket, badge of office is centered on it. If not, it is centered and touching the unit number or centered 4 in below the shoulder seam

- ❖ Trained leader emblem is worn below and touching badge of office. If sleeve has a pocket, emblem is centered on top of the pocket flap (Guide to Awards and Insignia, 2018)
- ❖ Den chief cord is worn over the left shoulder under the epaulet

Right Pocket

- ❖ Only one National or world Jamboree insignia is worn above BSA program, corporate or interpreter strip
- ❖ Order of the Arrow placed on pocket flap
- ❖ Temporary insignia can be worn centered on pocket flap or hung from the bottom
- ❖ Nameplate (optional) is centered above program or corporate/interpreter strip
- ❖ Jamboree emblem (optional) is worn above interpreter strip

Left Pocket

- ❖ Service stars are centered above pocket about $\frac{3}{4}$ in from the top point and $\frac{3}{8}$ in from either the pocket for embroidered knots
- ❖ Embroidered knots are placed in the center above the pocket in rows of three
- ❖ Up to five metals can be worn and pinner centered above the pocket
- ❖ Knot and medal order is up to the scout
- ❖ Rank badges are center on the pocket above the Arrow of Light (Guide to Awards and Insignia, 2018):
- ❖ World Create emblem and Messenger of Peace ring are horizontally centered over the left pocket and vertically between the left shoulder seam and the top of the pocket (Guide to Awards and Insignia, 2018):

SUCCESS

Success within Scouting is an individual's journey and can be determined in several ways. There is the obvious milestone that boost the scout's reputation within the organization such as earning new merit badges, new leadership positions, and achieving the rank of Eagle. However, the success of many scouts finds achievement and happiness through trying new thing whether if it is hiking in a new place or camping away from home for the first time. They also find fulfilment in helping others within their troop or in their community through team building and community service. When young men and women leave scouting, they take with them love for the outdoor, leadership skills, self-confidence, and good principles.

The goal of this apparel collection is to simply to allow the wearer to feel and perform their best, allowing themselves to not only physically and mentally push themselves but to enjoy the activity they are participating in. The collection reflects Scouting BSA's deep heritage while embracing their values of inclusivity, individuality, and service. It needs to fit the needs of the male and female adolescent who participates in outdoor activities such as hiking and camping.

ENVIORNMENT:

High Adventure

High Adventure is a unique scouting experience during the summer that puts scouts' skills to the test. It can include several days of hiking, camping, water sports and extreme sports. There are currently 4 locations troops can choose from each offering a variety of activities and challenges. Summit Bechtel Reserve, Northern Tier High Adventure, Sea Base and Philmont Scout Ranch. In 2019, 900,000 scouts attended one of these location (2019 Adventures, 2019).

Philmont Scout Ranch

For this project, the environment will focus on the Philmont Scout Ranch High Adventure Base, the biggest base. The ranch covers 140,177 acres of mountain wilderness in Sangre de Cristo range of the Rocky Mountains that ranges in elevation from 6,500 to 12,441 feet (High Adventure, n.d.). It operates 35 staffed camps and 55 trail camps that promote wildlife and forestry conservation through low-impact camping. Most of the activities are during the summer but they offer programs during the autumn and winter (About Philmont, n.d.). The terrain is steep and rocky with 1,000 ft climbs through hills and canyons. Temperatures range from 30 to 100 degrees Fahrenheit with low humidity from 100% - 30% (The Philmont Trek Experience, n.d.). Weather in Philmont can be extreme and sporadic. Extreme heat in the low valleys during the day and freezing in the mountains during the evenings. Downpours can also be sudden and can last anywhere from an hour to days with possibilities of hail. Snow is also possible during the summer.

Philmont Trek Itinerary 12-2:

Scouts who attend the Philmont Ranch and want to hike & camp can book trekking experiences ranging from 7, 9, and 12 days. All these options have several itineraries offering a variety of activities between the hiking such as fishing, rifle shooting, homesteading and a conservation project. This project will focus on the scout's hiking performance based on the 12-day trek itinerary 12-2.

The 12-2 trek loops through the Philmont North Country. It starts with a bus ride from the Base Camp to the Six-Mile Trailhead and a short hike to the first T-Rex footprint. Scout's then hike to the Anasazi trail camp to meet their Ranger and make their way up North Ponil Canyon to Indian Writings that exhibit ancestral Puebloan petroglyphs and archaeological sites. Scouts also learn what life was like on the railroad as then make their way to Metcalf Station where they rebuild parts of the railroad. The next destination is Ponil where the group Cowboy Action Shooting, roping, and branding. Scouts also get to spend the evening at the Cantina where they get have a chuckwagon meal and entertained at the evening Cantina Show. The group continues to head up the North Ponil River to the Pueblano Continental Tie and Luber Co. where

scouts can climb spar poles, rail ties and are entertained with a campfire performance. The journey continues up to Ute Meadows for a layover before ascending Philmont's highest peak on the Baldy Mountain of 12,441 ft. After, scouts' loop through Copper Park to the Aztec Mine at French Henry, and then ending up back at the Baldy Town mining town. The day after, there is a short hike to Miranda with activities like muzzle loading rifles, tomahawks and the mountain man rendezvous. Head of Dean and Santa Clause camp are the next destination where troops go through several activities that build confidence and teamwork along with 12-gauge shotgun shooting. The final day of hiking goes to the New Dean trail camp before heading to the Ponil Trailhead for back to Base Camp.

(Philmont Treks 2021 Itinerary Guidebook)

Mileage: 54 miles

Camping & Hiking Highlights

- ❖ Baldy Mountain-12,441 ft
- ❖ North Ponil Canyon
- ❖ Horse Canyon
- ❖ Baldy-Copper Park Loop

Activities

- ❖ 12 gage shotgun shooting
- ❖ Cowboy action shooting
- ❖ Blacksmithing
- ❖ Aztec Mine Tour
- ❖ Burro Packing (required)

Conservation Project

- ❖ Day 5- Ponil
- ❖ New Trail Construction

Campsite Elevation

- ❖ Minimum: 6,848 ft
- ❖ Maximum: 9,143 ft

Camps: 6 Staffed, 3 trail, 1 Layover



Figure 10: Itinerary 12-2 (<https://20lisa1ukask2skqr737a50o-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/2021ItineraryGuidebookWeb.pdf>, n.a)

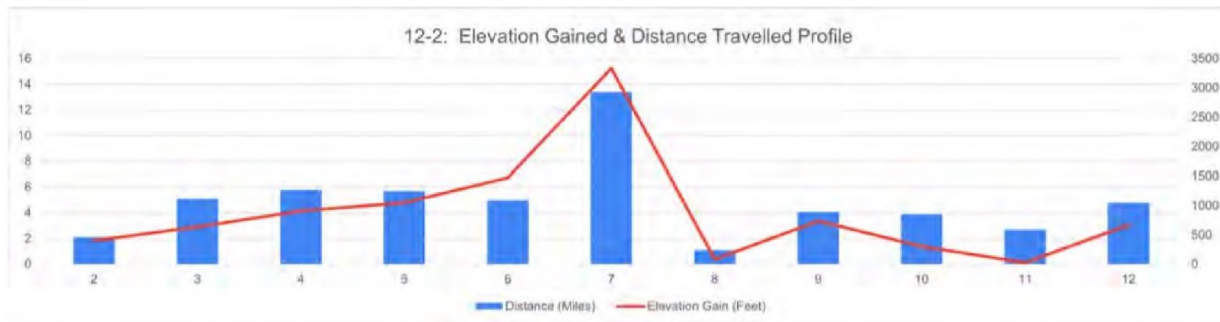


Figure 11: Elevation Gained & Distance Travelled Profile (<https://20lisa1ukask2skqr737a50o-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/2021ItineraryGuidebookWeb.pdf>, n.d)

Day	Camp	Miles	Gain	Loss	Program Features	Food Pickup
1	Camping HQ				Opening Campfire	
2	Anasazi	2.1	401'	207'	Ranger Training; T-Rex Track; Trail Camp	Camping HQ
3	METCALF STATION	5.1	637'	304'	Petroglyph Tour @ IW; Railroading, Blacksmithing, Campfire	
4	PONIL ^s	5.8	911'	1,006'	Western Lore/Branding, Cowboy Action Shooting, Cantina, Chuckwagon Dinner, Campfire	Ponil
5	PUEBLANO	5.7	1,050'	109'	Conservation @ Ponil; Pick up Burros; Tie Making, Campfire @ Pueblano	
6	Ute Meadows	5.0	1,476'	360'	Spar Pole Climbing @ Pueblano; Drop off Burros @ Miranda; Trail Camp	
7	Ute Meadows	13.4	3,311'	3,365'	Climb Baldy Mountain; Gold Panning, Mine Tour @ French Henry; Trail Camp	Baldy Town
8	MIRANDA	1.1	84'	355'	Mountain Man Rendezvous, Muzzle Loading Rifle, Tomahawk Throwing	
9	HEAD OF DEAN	4.1	736'	883'	Challenge Course Events	
10	SANTA CLAUS	3.9	305'	603'	12 ga. Shotgun Shooting and Reloading	
11	New Dean	2.7	29'	732'	Trail Camp	
12	Camping HQ	4.8	672'	1,526'	Hike to Ponil Trailhead; Awards Campfire	

(s) = Showers may be available

Figure 12: Daily Itinerary (<https://20lisa1ukask2skqr737a50o-wpengine.netdna-ssl.com/wp-content/uploads/2021/02/2021ItineraryGuidebookWeb.pdf>, n.a)

TARGET ATHLETE: THE YOUNG OUTDOOR ENTHUSIAST

The subject that the collection will be designed around are young men and female scouts between the ages 13-18 that are in the United States. There are currently 2.2 million youth members, 140,000 of them girls (History, n.d.). The target user has been a part of Scouts BSA since the Cub Scouts and have a decent amount of experience camping and hiking. They also are passionate about being outdoors and want to continue to push themselves. This will be their first time attending a summer High Adventure at the Philmont Ranch and need the correct clothing that will perform against Philmont's extreme weather patterns. These users are looking to be efficient and comfortable.

ATHLETE EXPERIENCE NEEDS

Athlete success can be measured simply as making it alive and completing the trip. Troops can also win multiple awards, but the 50-miler will be the quantifiable marker of success. This award is earned by hiking at least 50 miles and completing a 10-hour conservation project. The 12-day trip is not only physically challenging but mentally and emotionally difficult. Scouts carry around 1/3rd of their weight around 30-50 pounds along and can lose 20%-35% of oxygen at points of the journey. Philmont provides a guide outlining the journey along with physical training scout are recommended to be prepared. Training and preparation consist of the following according to the 2021 Philmont Guidebook to Adventure:

- ❖ Regular aerobic exercise starting 6 months or more before trip to increase maximum heart rate around 75% (Philmont 2021 Guidebook to Adventure, 2021)
- ❖ Average heart rate for a teen 15-18 years old is between 60-100 beats per minute (Pulse & Heart Rate, 2018)
- ❖ Maximum heart can be determined by 220 minus person's ages (Philmont 2021 Guidebook to Adventure, 2021)
- ❖ Jogging, swimming, bicycling, and hiking uphill w/ full pack is recommended
- ❖ Maintain a log of all physical activities to track progress
- ❖ Proper stretching before and after to prevent injuries and help with recovery
- ❖ Going out hiking & camping with troop to sharpen skills
- ❖ Learning how to pace yourself, especially when climbing steeper grades to not only conserve energy but to keep pace with the troop
- ❖ Learning how to rest without removing pack to keep rest stops short allowing for more frequent breaks

During the journey itself, preparation is extremely important. Scouts need to be attentive to what they pack and wear to ensure they bags are light but hold all the essentials. Gear needs to last the 12-day journey and scouts must be able to hike between 5-12 miles a day in isolated mountains (Philmont 2021 Guidebook to Adventure, 2021). Since the weather is very fickle and unpredictable, scouts should have clothing prepared for extreme heat and cold. Quick drying clothing is extremely important, especially for the cold evenings as wet clothing can lose around 90% of its insulating value (Philmont 2021 Guidebook to Adventure, 2021). Fortunately, New Mexico's low humidity allows for clothing to quickly dry. Scouts also need to layer for insulation and allowing the scout to easily adapt to the changing temperatures throughout the day. Short & long sleeve shirts along with rain jackets/ponchos, sweaters and fleece jackets should be packed. Long pants are needed for the cold night along with other activities such as horseback riding, conservation projects and pole climbing. Scout also need to bring along their uniform that is worn to and from Philmont and at the base camp.

PRODUCT ANATOMY

BSA Uniforms

All official scouting uniforms & products are approved and distributed by Scout BSA's National Service Center or local Scouting distributors. Uniforms must follow the guidelines that are in the handbooks. The following bellow breaks down the uniforms that are acceptable.

Youth Uniform Long Sleeve Shirt (Scouts BSA Cotton Rich Poplin Uniform Long Sleeve Shirt, n.d.):

- ❖ Parts: body, collar, flap pockets, buttons, sleeves, epaulets, back pleats & hem
- ❖ \$34.99 USD
- ❖ 67% Cotton & 33% Polyester
- ❖ Wrinkle & dirt resistant
- ❖ Double needle construction
- ❖ Back pleats & hem for movement
- ❖ UPF rating: 40+
- ❖ Cut & sew



Figure 13: Scouts BSA Cotton Rich Poplin Uniform Long Sleeve Shirt (<https://www.scoutshcp.org/new-uniforms/boy-scouts/girls/boy-scout-youth-long-sleeve-cotton-rich-poplin-shirt-606561.html>, n.a)

Youth Uniform Short Sleeve Shirt (Cotton Rich Poplin Uniform Short Sleeve Shirt, n.d.):

- ❖ Parts: body, collar, flap pockets, buttons, sleeves, epaulets, front & back panel
- ❖ \$24.99 USD
- ❖ 67% Cotton & 33% Polyester
- ❖ Wrinkle & dirt resistant
- ❖ Double needle construction
- ❖ Back pleats & hem for movement
- ❖ Cut & sew



Figure 14: Scouts BSA Cotton Rich Poplin Uniform Short Sleeve Shirt (<https://www.scoutshcp.org/new-uniforms/boy-scouts/girls/boy-scout-youth-short-sleeve-cotton-rich-poplin-shirt-606757.html>, n.a)

Boy's Uniform Short Sleeve Shirt (Scouts BSA Uniform Short Sleeve Shirt, Boys', n.d.):

- ❖ Parts: body, collar, flap pockets, buttons, sleeves, epaulets, backside vents, front & back panel
- ❖ \$37.99 USD
- ❖ 54% Cotton, 43% Polyester, 3% Spandex
- ❖ Side vents in the back for ventilation
- ❖ Streamlined fit
- ❖ Cut & sew



Figure 15: Scouts BSA Uniform Short Sleeve Shirt, Boys' (<https://www.scoutshcp.org/scouts-bsa-boys-uniform-short-sleeve-shirt-khaki-xs-xl.html>, n.a)

Youth Nylon Uniform Long Sleeve Shirt (Scouts BSA Nylon Uniform Long Sleeve Shirt, Youth, n.d.)

- ❖ Parts: body, collar, flap pockets, buttons, sleeves, epaulets, front & back panel
- ❖ \$44.99 USD
- ❖ 100% Supplex Nylon
- ❖ Moisture Wicking
- ❖ UPF Rating: 40+
- ❖ Cut & sew



Figure 16: Scouts BSA Nylon Uniform Long Sleeve Shirt, Youth (<https://www.scoutshcp.org/boy-scout-long-sleeve-nylon-youth-shirt-606139.html>, n.a)

Youth Uniform Polyester Microfiber Short Sleeve Shirt (Scouts BSA Polyester Microfiber Uniform Short Sleeve Shirt, Youth, n.d.)

- ❖ Parts: body, collar, flap pockets, buttons, sleeves, epaulets, back mesh yolk, front & back panel
- ❖ \$34.99 USD
- ❖ 70% Polyester, 30% Polyamide
- ❖ Aegis Antimicrobial Technology
- ❖ Prevents odor-causing bacteria
- ❖ Moisture wicking
- ❖ Back mesh yolk for breathability
- ❖ Cut & sew



Figure 17: Scouts BSA Polyester Microfiber Uniform Short Sleeve Shirt, Youth (<https://www.scoutshcp.org/new-uniforms/boy-scouts/girls/boy-scout-youth-short-sleeve-polyester-microfiber-shirt-612149.html>, n.a)

Girl's Uniform Short Sleeve (Scouts BSA Girls Uniform Short Sleeve Shirt, Khaki, n.d.)

- ❖ Parts: body, collar, flap pockets, hidden button placket, buttons, sleeves, epaulets, back side vents, front & back panel
- ❖ \$37.99 USD
- ❖ 54% Cotton, 43% Polyester, 3% Spandex
- ❖ Side vents in the back for breathability
- ❖ Cut & sew



Figure 18: Scouts BSA Girls Uniform Short Sleeve Shirt, Khaki (<https://www.scoutshcp.org/scouts-bsa-girls-uniform-short-sleeve-shirt-khaki.html>, n.a)

Boy's Switchback Uniform Pant (Scouts BSA Switchback Uniform Pant, Boys', n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper, zipper off leg
- ❖ \$48.99 USD
- ❖ 66% Cotton, 32% Nylon, 2% Spandex
- ❖ Convertible zip off pant to shorts
- ❖ Interior adjustable buttonhole elastic waistband for adjustable fit
- ❖ Cut & sew



Figure 19: Scouts BSA Switchback Uniform Pant, Boys' (<https://www.scoutshcp.org/scouts-bsa-boy-switchback-pant-olive-8-20.html>, n.a)

Boy's Canvas Switchback Uniform Pant (Scouts BSA Canvas Uniform Switchback Pant, Youth, n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper, zipper off leg
- ❖ \$34.99 USD
- ❖ 67% Cotton, 33% Polyester
- ❖ Convertible zip off pant to shorts
- ❖ Wrinkle free
- ❖ UPF Rating 40+
- ❖ Cut & sew



Figure 20: Scouts BSA Canvas Uniform Switchback Pant, Youth (<https://www.scoutshcp.org/new-uniforms/boy-scouts/girls/boy-scout-youth-canvas-convertible-pants-606130.html>, n.a)

Youth Uniform Canvas Cargo Short (Scouts BSA Canvas Uniform Cargo Short, Youth, n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper
- ❖ \$24.99 USD
- ❖ 100% brushed cotton canvas
- ❖ Wrinkle resistant
- ❖ Enzyme-washed for soft feel
- ❖ UPF 40+



Figure 21: Scouts BSA Canvas Uniform Cargo Short, Youth (<https://www.scoutshop.org/new-uniforms/boy-scouts/girls/boy-scout-uniform-canvas-cargo-shorts-youth-612948.html>, n.a)

Boy's Uniform Shorts (Scouts BSA Uniform Short, Boys', n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper
- ❖ \$26.99 USD
- ❖ 66% Cotton, 32% Nylon, 2% Spandex
- ❖ Cut & sew



Figure 22: Scouts BSA Uniform Short, Boys' (<https://www.scoutshop.org/scouts-bsa-boy-s-uniform-short-olive-8-20.html>, n.a)

Girl's Uniform Roll-Up Pant (Scouts BSA Roll-Up Uniform Pant, Girls', n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper, button leg fasteners
- ❖ \$48.99 USD
- ❖ 66% Cotton, 32% Nylon, 2% Spandex
- ❖ Worn as full length or rolled up capris
- ❖ Rolled up capris secured by button leg fasteners
- ❖ Cut & sew



Figure 23: Scouts BSA Roll-Up Uniform Pant, Girls' (<https://www.scoutshop.org/new-uniforms/boy-scouts/scouts-bsa-roll-up-uniform-pant-girls-648629.html>, n.a)

Girl's Uniform Skort (Scouts BSA Girl's Uniform Skort, Olive, n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, zippered welt pockets, fly zipper, shorts liner
- ❖ \$26.99 USD
- ❖ 66% Cotton, 32% Nylon, 2% Spandex
- ❖ Fleur-de-lis embroidery
- ❖ Knit shorts liner that is breathable and moisture wicking
- ❖ Cut & sew



Figure 24: Scouts BSA Girl's Uniform Skort, Olive (<https://www.scoutshop.org/shop-by-scout/boy-scouts/bottoms/scouts-bsa-girl-s-uniform-skort-olive.html>, n.a)

Girl's Uniform Shorts (Scouts BSA Uniform Short, Girls', n.d.)

- ❖ Parts: body, waistband & belt loops, front & back pockets, cargo pockets, back yolk, fly zipper
- ❖ \$24.99 USD
- ❖ 66% Cotton, 32% Nylon, 2% Spandex
- ❖ Stretch canvas for durability and comfort
- ❖ Cut & sew



Figure 25: Scouts BSA Uniform Short, Girls' (<https://www.scoutshop.org/new-uniforms/boy-scouts/scouts-bsa-girls-uniform-short-648809.html>, n.a)

Uniform Stretch Fit Hat (Boy Scouts of America Stretch Fit Adult Uniform Cap - S/M, n.d.)

- ❖ Parts: visor, crown, eyelets, stretch sweatband
- ❖ \$18.99 USD
- ❖ 95% Polyester, 5% Spandex
- ❖ Stretch fit
- ❖ UPF Rating: 40+
- ❖ Cut & Sew



Figure 26: Boy Scouts of America Stretch Fit Adult Uniform Cap - S/M (<https://www.scoutshop.org/boy-scouts-of-america-stretch-fit-adult-uniform-cap-s-m-622367.html>, n.a)

BSA Outerwear

Youth options in this category is non-existent except for a few hoodies that have Cub Scout branding on it. Those who can fit can wear the adult selection which is also lacking in variety of performance outerwear. The only 3 products for both men's and women's are listed are the LizardHead tunic, hoodie, and quilted vest.

Men's & Women's LizardHead Raglan Hoodie (LizardHead Raglan Hoodie, Maroon, n.d.)

- ❖ Parts: body, sleeve, hood
- ❖ \$34.99 USD
- ❖ 50% Polyester, 50% Cotton
- ❖ Universal fit
- ❖ Cut & Sew



Figure 27: LizardHead Raglan Hoodie, Maroon (<https://www.scoutshop.org/lizardhead-raglan-hoodie-maroon-653033.html>, n.a)

Men's & Women's LizardHead Quilted Vest (LizardHead Men's Quilted Vest, n.d.)

- ❖ Parts: body, collar, front zipper, zipper side packets, down
- ❖ \$74.99 USD
- ❖ 210 Taffeta, 100% Polyester lining, 100% Recycled polyester
- ❖ DWR finished shell
- ❖ 60 GSM synthetic down
- ❖ Windproof for insulation
- ❖ Sleeveless silhouette for mobility
- ❖ Cut & sew



Figure 28: LizardHead Men's Quilted Vest (<https://www.scoutshop.org/lizardhead-mens-quilted-vest-653178.html>, n.a)



Figure 29: LizardHead Ladies Quilted Vest (<https://www.scoutshop.org/lizardhead-ladies-quilted-vest-653159.html>, n.a)

Women's LizardHead Ladies Tunic (LizardHead Ladies Tunic, n.d.)

- ❖ Parts: body, roll up sleeves, side pockets, sleeve button, button front, back vent, drape neck collar
- ❖ \$59.99 USD
- ❖ 66% Cotton, 29% Nylon, 5% Spandex
- ❖ Mesh-lined back vent for breathability
- ❖ Moisture wicking
- ❖ Roll up sleeves for modularity
- ❖ UPF rating: 40+
- ❖ Cut & sew



Figure 30: LizardHead Ladies Tunic (<https://www.scoutshop.org/lizardhead-ladies-tunic-653197.html>, n.a)

Light Weight Hiking Shell

Hiking enthusiasts have many different varieties of hiking shells to choose from that are designed for different environments. This project will zone in on the ultralight hiking shell for its focus on weight and packability while still being breathable and protection from the elements. When shopping for an ultralight hiking shell, the weight should be 10 ounces and under and have some packability (The Best Ultralight Hiking and Running Jackets of 2021, 2021). The reason for this is because many of the heavier options are not as breathable and can get soaked by sweat from rigorous activities. These jackets should also be waterproof/resistant to protect the body from the rain. The following below shows a couple best men's & women's ultralight hiking jackets of 2021.

Outdoor Research Helium Jacket

Parts: body, sleeves, adjustable hood, front zipper, elastic draw cord hem, zipper chest pocket, elastic cuffs, carabiner loop, reflective logo & forearm overlays

- ❖ \$159 USD
- ❖ 100% Nylon
- ❖ 6.3 ounces
- ❖ 2.5-layer Pertex Shield
- ❖ Chest pocket doubles as a stuff sack
- ❖ Carabiner loop and key clip



- ❖ Cut & sew

*Figure 31: Outdoor Research Helium Jacket
(https://www.rei.com/product/166198/outdoor-research-helium-rain-jacket-mens?cm_mmc=c_f_AL_-197113_-249277_-NA&avad=249277_e24bd5f79, n.a)*

Columbia FKT II Windbreaker Jacket (Men's FKT™ II Windbreaker Jacket, n.d.)

- ❖ Parts: body, sleeves, front zipper, zipper, elastic cuffs, hand pockets, thumb holes, reflective detail
- ❖ \$120 USD
- ❖ Omni-shield for water/wind repellency
- ❖ 7.2 ounces
- ❖ Light weight & packable
- ❖ Cut & sew



*Figure 32: Columiba FKT II Windbreaker Jacket
(<https://climbinggearreviewsuk.files.wordpress.com/2019/05/fkt-wind-jacket.jpeg?w=536&h=536&crop=1&zoom=2>, n.a)*

Hiking Long Sleeve Shirts

Hiking shirts are essential as they are extremely versatile and are designed to wick moisture, dry quickly, flexible, and protection from harmful sun rays. Many long sleeve shirts have the option to be rolled up and be buttoned to become a short sleeve.

Men's Columbia Silver Ridge Lite Long-Sleeve Shirt (Columbia Silver Ridge Lite Long-Sleeve Shirt - Men's, n.d.)

- ❖ Parts: body, sleeves, back vents, rollup tabs, button front closure, right and left chest flap pockets

- ❖ \$55.00 USD
- ❖ 100% Polyester
- ❖ Omni-wick for moisture wicking and quick drying
- ❖ UPF rating: 40
- ❖ Antimicrobial treatment for odor prevention
- ❖ Back vents for ventilation
- ❖ Rollup sleeve tab for modularity
- ❖ Cut & sew



Figure 33: Columbia Silver Ridge Lite Long-Sleeve Shirt - Men's (https://www.rei.com/product/895032/columbia-silver-ridge-lite-long-sleeve-shirt-mens?cm_mmc=c_f_AL--197113--249277--NA&avad=249277_f254c202a)

Women's REI Co-op Sahara Button-Up Long-Sleeve Shirt (REI Co-op Sahara Button-Up Long-Sleeve Shirt - Women's, n.d.)

- ❖ Parts: body, sleeves, back vents, rollup buttons, button front closure, snap chest pockets
- ❖ \$59.95 USD
- ❖ 95% Nylon, 5% Spandex
- ❖ Convertible sleeves roll up with a button to secure it
- ❖ UPF rating: 35
- ❖ Snap chest pockets for security
- ❖ Underarm panels treated with LAVA XL for quick drying and odor resistance



Figure 34: REI Co-op Sahara Button-Up Long-Sleeve Shirt - Women's (<https://www.rei.com/product/120043/rei-co-op-sahara-button-up-long-sleeve-shirt-womens>)

Convertible Hiking Pants

Convertible hiking pants offer many advantages when hiking and camping at the Philmont Spouting Ranch. Convertible pants are modular; allowing the hiker to change from shorts to long pants by zipper. These are good for environments that have variable temperatures throughout the day. This also lightens the load of the hiker as they do not need to carry an extra pair of pants (CamotrekStaff, 2019).

Columbia Men's Silver Ridge Convertible Hiking Pants (Columbia Men's Silver Ridge Convertible Pants, n.d.)

- ❖ Parts: body, partial elastic waistband & belt loops, front & back pockets, zip-closed pockets, mesh pocket bags, back yolk, fly zipper, zipper off leg, gusset
- ❖ \$60 USD
- ❖ Omni-Shade Main Body (100% Nylon)
- ❖ Omni-Wick Mesh Panels (57% recycled Polyester, 43% Polyester mesh)
- ❖ 50 UPS Sun Protection
- ❖ Moisture wicking
- ❖ Convertible pants to shorts
- ❖ Multiple utility pockets
- ❖ Cut & sew



Figure 35: Men's Silver Ridge™ Convertible Pants (<https://www.columbia.com/p/mens-silver-ridge-convertible-pants-AM8004.html>, n.a)

REI Women's Saturday Convertible Pants

- ❖ Parts: body, partial elastic waistband & belt loops, adjustable belt buckle, front & back pockets, zip-closed pockets, back yolk, fly zipper, zipper off leg, center gusset, high thigh zipper
- ❖ \$65 USD
- ❖ 96% Nylon, 4% elastane
- ❖ Omni-Shield for repelling water & stains
- ❖ Omni-Shade UPF sun protection
- ❖ Zippered security pocket
- ❖ 2-way stretch fabric for comfort
- ❖ Convertible pants to 10in shorts
- ❖ Articulated knee and gusset for movement
- ❖ Mid rise
- ❖ Cut & sew



Figure 36: Columbia Saturday Trail Convertible Pants - Women's (<https://www.rei.com/product/881059/columbia-saturday-trail-convertible-pants-womens?color=INDLA%20INK>, n.a)

Hiking Headwear

Hiking hats are used to provide protection the hikers head from the sun. A good hat for hiking should be lightweight (below 3 oz), packable, good fit, and breathable. Wide brimmed allows for maximum sun protection around the entire head. Flat/caped have shade coverage in the front and have an extra piece of fabric that drapes down the neck for protection on ears and neck when the sun is lower in the sky. The cap is the most versatile and is great before, during and after hike (The 12 Best Hiking Hats of 2021, 2021).

Sunday Afternoons Ultra Adventure Hat (Sunday Afternoons Ultra Adventure Hat, n.d.)

- ❖ Parts: clamshell brim, neck cape, sunglass lock, sweatband, crown vents, adjustable draw string
- ❖ \$42 USD
- ❖ 88% Nylon, 12% Polyester
- ❖ 2.6 ounces
- ❖ 50 UPS Sun Protection
- ❖ Sun protective
- ❖ Moisture wicking
- ❖ Crown ventilation
- ❖ 6in neck cape
- ❖ Water & stain resistant
- ❖ Sweat wicking band
- ❖ Cut & sew



Figure 37: Sunday Afternoons Ultra Adventure Hat
(https://www.rei.com/product/894435/sunday-afternoons-ultra-adventure-hat?cm_mmc=cjf_AL--157226--196286--NA&avad=196286_c24tj6329_n.a)

REI Co-op Sahara Outback Cape Hat (REI Co-op Sahara Outback Cape Hat, n.d.)

- ❖ Parts: brim, storable cape, mesh panels, foam in brim, headband, adjustable chin strap
- ❖ \$39.95 USD
- ❖ 100% Nylon
- ❖ 50 UPS Sun Protection
- ❖ Neck Cape for neck & ear protection
- ❖ Quick drying
- ❖ Mesh panels for breathability
- ❖ Polyester wicking headband
- ❖ Cut & sew



Figure 38: REI Co-op Sahara Outback Cape Hat
(https://www.rei.com/product/126630/rei-co-op-sahara-outback-cape-hat?cm_mmc=cjf_AL--157226--196286--NA&avad=196286_c24tj936d_n.a)

REI Co-op Screeline Cap (REI Co-op Screeline Cap, n.d.)

- ❖ Parts: brim, mesh crown ventilation, sweatband
- ❖ \$26.95 USD
- ❖ 100% Polyester
- ❖ UPF Rating 30 mesh liner
- ❖ Foldable brim
- ❖ Sunglass loops for shades
- ❖ Side vents
- ❖ Cut & sew



Figure 39: REI Co-op Screeline Cap
(https://www.rei.com/product/168186/rei-co-op-screeline-cap_n.a)

INNOVATION LANDSCAPE

Gore-Tex Paclite

Gore-Tex Paclite is a part of the Gore-Tex product range that is engineered to be packable, while still providing comfort and protection from the elements. It is extremely breathable, waterproof and wind proof. The construction is minimal with two layers consisting of the Gore-Tex membrane bonded to an outer shell material. It is then covered by a protective layer made from an oleophobic (anti-oil) substance and carbon that replaces DWR. This replaces separate linings that are in traditional shells. Paclite also includes Gore-Tex's stretch technology creating a garment that is extremely light, flexible, and protective (Gore-Tex Paclite, n.d.)



Figure 40: Gore-Tex Paclite (<https://www.gore-tex.com/technology/original-gore-tex-products/paclite>, n.a)

Oros's Solarcore

Aerogel was developed by NASA to insulate their spacecraft at -450 Fahrenheit. Oros's saw an opportunity to adapt the thermal qualities of Aerogel and adapt it to their garments. Some of the challenges they needed to tackle was turning the hard and brittle properties of Aerogel to soft and wearable along with ensuring the moisture of the skin would not dry out when wicking. Oros's solved this by combining Aerogel's thermal properties with a flexible polymer composite. This innovation created a material that is extremely flexible and light weight without sacrificing insulation. Just 2mm can provide just as much warmth at 30 mm of a synthetic down jacket. This technology has been thoroughly tested in the most extreme temperatures. Even when put under a liquid nitrogen storm (-321 F/-196 C), the material still maintained an internal temperature of 89 F/32 C. Solarcore is also eco-friendly by using recycled polyester, PFC-Free DWR, feather free and has a 4 way stretch. (Solarcore, n.d.)

Wicking Windows

Cottonworks Incorporated has developed a moisture wicking technology that can be applied to knit and woven fabrics through print. The print is colorless and can only be seen when moisture meets the fabric. Wicking Windows has three different variations for moisture wicking: single print process, double print, and phase change material. Single print allows moisture to simply move to the outside of the garment, double print offers

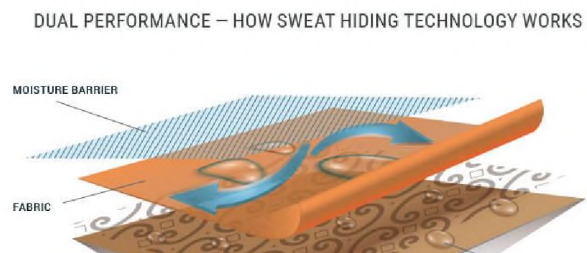


Figure 41: Wicking Window (<https://www.cottonworks.com/topics/fabric-technology/performance-technologies/wicking-windows-technology/>, n.a)

sweat-hiding properties and moisture management, phase change material is applied as a print paste that provides temperature regulation, and cooling properties. (Wicking Window, n.d.)

The Window Wicking print is printed on the skin side of the fabric so as the wearer sweats, the printed area stays dry, and the “windows” pull moisture to be evaporated. The print allows for less fabric cling, keeps wearer cool and dry, washes, odor resistant and keeps sweat marks hidden. (Wicking Window, n.d.)

COLOR TREND



*Figure 42: Global Color Forecast A/W 23/24
(<https://www.wgsn.com/fashion/article/91941#page4>, n.a)*

The color palette chosen for this collection is named Long-tern color for A/W 23/24, S/S and beyond (Global Colour Forecast A/W 23/24, n.d.). This was a 10-color palette narrowed down to 6 that are relevant to the Scouting brand. The colors are variations of earthy colors already used by Scouts BSA and will be relevant beyond 2024.

GRAPHIC TREND

Ancient Nature

Gen Z's growing interest in nature and traditional wisdom. This can be categorized as arcane modernism. Big focus on artifacts found in nature such as rocks, minerals, and fossils. Graphics use high contrast filters, halftones, and soft-focus blurs to give a lo-fi look. This taps into the current outdoor boom. Gender inclusive cut & sew, printed fleece and denim are key in this category (Fast Track: Ancient Nature, n.d.)



Figure 43 Ancient Nature (<https://www.wgsn.com/fashion/article/91176#page2>, n.a)

Mineral Markings

The evolution of abstract camos and animal prints to create nature inspired patterns (Mineral Markings, n.d.).



Figure 44: Mineral Markings (<https://www.wgsn.com/fashion/article/90589#page3>, n.a)

BRANDING TREND

The BSA Scouting logo for the most part has remained the same, using the fleur-de-lis, the eagle, and the American flag colors. The fleur-de-lis represents north on a compass along with 3 pedals that symbolize the three parts of the Scout Oath: To do my duty to God and my country and to obey the Scout, to help other people at all times, and to keep myself physically strong, mentally awake and morally straight (Points in history: Three things to know about why Scouts use the fleur-de-lis, 2021). The eagle represents leadership and what scouts has done and will continue to do into adulthood (Significance of the Eagle Rank, 2021). The logo looks very militaristic and patriotic. It also does not embrace outdoors as an influence in Scouting. The following below are outdoor brand logo concepts that could be used in designing a modern logo that still embraces Scouting's heritage.



Figure 45: Arc'teryx and Patagonia logos

The most important part of developing now branding a logo is straying away from the militaristic aesthetic and aiming towards logo and branding that shows its roots in the outdoors.

PHYSIOLOGICAL RESEARCH

Research on adolescent male and female athletes are scarce in comparison to research on adult athletes. The reason for this is because of the rapid changes that teenagers experience during puberty. Accurate studies on evaluation of young athletes' performance are heavily influenced by their stage of physical development and maturity. Puberty is the period of physical growth, development of secondary sexual characteristics and the maturing of psychosocial skills. Although these changes are predictable, progression of these pubertal events vary from person to person (Brown, Patel, & Darmawan, 2017). Many of these changes have positive and negative effects on these young athletes' performance.

Growth Spurts

The stages of maturation from early childhood consist of pre puberty, puberty, post puberty and maturation. Growth spurts typically happen between 12-15 years old for females and 14-17 to males with varying peak height velocity of 8 to 10 cm per year. This peak height is usually achieved for girls at 12 years old and 14 years old for boys (Pyke, n.d.). Girls' growth spurts occur around age 11 but can start as early as 8 or late as 14, while boys trail behind about 2 years. This is why girls typically are taller early on in puberty (Suanne Kowal-Connelly, 2016). Along with the increase in body size, hormones and strength also grow which can benefit performance of the athlete.

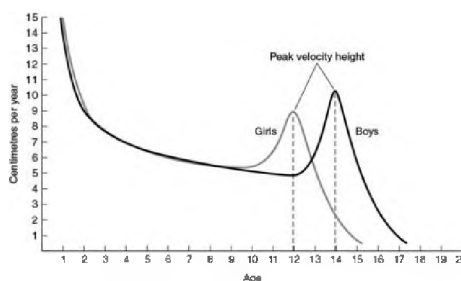


Figure 8.1 Peak velocity height curve for girls and boys showing the increase in stretch stature (height) expressed in units of centimetres per year.

From <http://www.brianmaccoo.uk/lead.html>

Figure 46: Peak velocity height
(<https://canada.humankinetics.com/blogs/excerpt/physical-development-and-maturation-in-young-athletes/?fbclid=IwAR2zcMoX37chGuLYvQ74r2PVzpp0vw7d7HPE8IRLJGlibz8mP9568q7QFdqk>, n.a.)

Thermoregulation

Heat related injuries rank second to head injuries for youth. Adults and adolescents regulate heat stress very differently. Youths rely on dry heat exchange (conduction, convection, and radiation) while adults rely on evaporative heat loss through sweat, despite children having higher numbers of heat-activated sweat glands per unit skin area (Bar-Or, 2006). Children also have a greater surface-area-to-mass ratio leading to higher absorption of heat. They also have lower sweating rate, higher peripheral blood flow in the heat, and a greater extent of vasoconstriction in the cold (Falk & Dotan, 2010). The result is shorter exercise tolerance, higher sensitivity, and longer acclimation to temperature change, putting adolescents' athletes at risk of heat.

Table 1. PHYSIOLOGIC RESPONSES OF CHILDREN TO EXERCISE IN THE HEAT: COMPARISON WITH ADULTS	
Characteristic	Typical for Children, vs Adults
Metabolic heat of locomotion	Higher
Sweating rate per m ² skin	Lower
Sweating rate per gland	Much lower
Sweating threshold	Higher
Population density of HASG	Higher
Cardiac output/L O ₂ uptake	Lower
Blood flow to skin	Higher
Sweat NaCl content	Lower
Sweat Lactate and H ⁺	Higher
Exercise tolerance time	Shorter
Acclimatization to heat	Slower
Core temp. rise with dehydration	Faster

†HASG = heat-activated sweat glands

Figure 47: Physiologic Response of children to exercise in the heat compared to adults (<https://www.gssiweb.org/sports-science-exchange/article/sse-49-children-s-responses-to-exercise-in-hot-climates-implications-for-performance-and-health>, Odea)

Heat from the body is created during muscle contraction and needs to be dissipated to avoid overheating. As shown in Figure 46, children’s metabolic heat of locomotion is greater than adults, imposing an extra load on their thermoregulatory system (Bar-Or, 2006). Since children rely mainly on convection move heat from the body’s core to the skin, blood flow to the skin must be increased resulting in red colored skin. The percentage of cardiac output going to the skin is higher in children than adults during exercise in the heat but overall cardiac output per unit of oxygen uptake is lower in children (Bar-Or, 2006). Sweat is also very different for adults and children. Concentrations of Na⁺ are higher in pre- and mid-pubescent girls and boys that young adults (Bar-Or, 2006). There are not many studies how adolescent physiologic characteristics perform under climatic heat stress. However, from what has been tested, these youth have been able to thermoregulate efficiently in mild and moderate hot-dry conditions during exercise. It is when youth are exposed to extreme heat is where the tolerance is shorter the adults (Bar-Or, 2006).

When transitioning from cool to warm climate, it takes several exposures for complete acclimatization. It is suggested through a study that training can decrease the physiologic strain experienced when exercising in hot climates. This was tested by giving untrained children aerobic training (60-min sessions at 85% HR max) in a thermoneutral environment for two weeks. The result was the average rise in their core temperatures during exercise following training in a manner similar to that seen following acclimation (Bar-Or, 2006).

Flexibility

Female adolescents have greater musculoskeletal and physical flexibility than males. During mid-adolescence, skeletal growth typically occurs before musculotendinous growth especially in males, contributing to the decrease in their musculotendinous flexibility. Although males, flexibility decreases during mid adolescence, it increases for females in early adolescence and plateaus by age 14-15. However, this does not apply to everyone as many physical factors influence individual’s flexibility that include muscle volume, bone structure, tendons, joint capsules, and ligaments that contribute to tissue elasticity. Environmental factors also play a role

such as temperature or an athlete's warm-up and physical activity (Brown, Patel, & Darmawan, 2017). Bone growth happened so quickly that the length of muscles is unable to keep up, they can experience ligament pain. The most common is Osgood Schlatter's (knee pain caused by tightness in the quad muscles) and Sever's Disease (heel pain from tightness in the Achilles Tendon). These conditions occur because of traction injuries to the cartilage and bony attachment of the tendons (Staying Flexible Through Puberty, n.d.). It is recommended that young athletes do dynamic & static stretching before and after physical activities as a way to maintain and improve flexibility during maturation.

BIOMECHANICAL RESEARCH

Biomechanical studies for adolescent athletes in the outdoor space is extremely difficult to find. This section will focus on training to prevent injury due to changes in center of gravity, gait analysis for walking speed in children compared to adults and the energetics of walking on uneven terrain for adults.

Adolescent Athlete Training to Prevent Injury

The rapid velocity of the physiological shifts decreases balance and body control due to the body constantly adjusting to the changes in height and weight. As a result, young athletes have a higher chance of ACL injuries as muscles development adapts to the changes (Suanne Kowal-Connelly, 2016). To help coaches, various long-term athlete development models have been made to train adolescents at benchmarks of the maturation process. The two well-known model are the theory of periodization of training by Tudor Bompa, and the long-term athlete development by Istvan Balyi. Early specialization version is for athletes starting at a younger age for skill-oriented sports such as gymnastics. It and has four stages consisting of training to train, training to compete, training to win and retirement and retainment. The late specialization version is primarily for athletes in strength or power sports. The five stages of this version are fundamentals (ages 5 to 9), learning to training (ages 8 to 12), training to train (ages 11 to 16), training to compete (ages 15 to 18) and training to win (older than 17). Training loads increase gradually as younger athletes progress through to senior ranks (Pyke, n.d.). According to Frank Pyke, young athletes should be introduced to the concept of testing around the age of 13 or 14 with very basic tests of performance, fitness, and skills along with stretching, recovery practices, nutrition and hydration, and mental preparation. Organized testing is then introduced at age 15 or 16 with the focus on training and competition through fitness, conditioning, psychological preparation, and technical development. By age 17 or 18, the athletes' physical, technical, mental, personal and lifestyle capacities have developed, and training focuses on maximization of performance (Pyke, n.d.).

Walking Speed on Gait

The study by Claudine Arakaki, Reginaldo Fukuchi and Marcos Duarte performed a systematic review of the effects of gait speed on spatiotemporal parameters, joint kinematics, joint kinetics, and ground reaction forces in healthy children, young adults, and older adults. This

was done through electronic searches on PubMed, Embase and Web of Science data bases between 1980 and 2019. They found twenty original full-length gait pattern studies that analyzed 587 healthy individuals (227 children, 310 young adults, 59 older adults). For the most part, gait speed affects the amplitude of spatiotemporal gait parameters, joint kinematics, joint kinetics, and ground reaction forces. It decreases at slow speeds and increases when speed rises. (Claudiane Arakaki Fukuchi, Fukuchi, & Duarte, 2019). Below shows the comparison between children and adults when speed increases and decreases.

The children's gait speed mainly influenced the spatiotemporal parameters. What was found at slower speeds, changes in children's cadence and step length show significant decreases compared to adults' cadence with an effect size difference -1.65 for cadence and -1.76 for step length. Also at slow speeds, changes in adults stride length are slightly greater than children with an effect size difference -0.34. At faster speeds, children's changes in cadence and step length are still greater than adults with an effect size difference of 1.3 for cadence and 1.52 for step length (Claudiane Arakaki Fukuchi, Fukuchi, & Duarte, 2019). Results were also very similar in changes in joint kinematics at slower speeds. Hip flexion decreases in children compared to adults with an effect size difference -0.46. Knee flexion and ankle plantarflexion also decreased more in children than adults with an effect size difference of -0.44 for knee flexion and -0.6 for ankle plantarflexion (Claudiane Arakaki Fukuchi, Fukuchi, & Duarte, 2019).

Energetics of Walking on Uneven Terrain for Adults

Although this study was conducted on adults, the method of testing and observation can be applied to analyzing gait in young outdoor participants in Scouting. The purpose of the study was to determine how the changes in walking biomechanics on uneven terrain relate to increased metabolic cost. Humans encounter complex terrain every day, from trails, grass, snow, and uneven sidewalks. Walking on uneven terrain takes more energy and coordination than walking on smooth ground, resulting in changes in walking gait due to adjusting the body's center of gravity. These terrains have features that affect locomotion such as height variations, damping and friction. Uneven terrain also requires more mechanical work from the legs which is independent of the effect on step parameters. It is hypothesized that walking economy is improved by pushing off with the trailing leg just prior to the collision of the leading leg. The push-off redirects the body's center of mass and can reduce negative work performed (Biomechanics and energetics of walking on uneven terrain, 2013). However, uneven terrain upsets the timing resulting in negative work and muscles compensate for the changes. In order to be stable when walking, adults typically take shorter and wider steps as they grow older. Step width could show increased variability, because lateral balance may be more dependent on active stabilization because of passive dynamic stability. Co-activation in muscles also helps with stability on uneven terrain, especially at the ankle joint (Biomechanics and energetics of walking on uneven terrain, 2013).

To conduct this experiment over ground and treadmill surface was modified with uneven surfaces were made to collect continuous kinematic and energetics data. Wooden blocks were arranged in squares and glued together to form three different heights (1.27, 2.54 and 3.81 cm); mimicking uneven ground. The block's surface was also covered with a layer of cushioning foam

and arranged in a repeating pattern (Biomechanics and energetics of walking on uneven terrain, 2013). Although the pattern was placed in a repeating pattern, the unevenness made it difficult for the subject to adopt to the conditions resulting in realistic data.

The results of the testing were that walking on uneven terrain resulted in a variety of changes to gait compared with walking on smooth terrain. Subjects walked with shorter step lengths and increased step variability. Gait kinematics remained similar but knee and hip mechanical work increased. Step length and step duration decreased by 3.7% but step period variability also increased significantly by 26.7% (Biomechanics and energetics of walking on uneven terrain, 2013). Locomotion on terrain with a surface variability of only 2.5 cm resulted in a 28% increase in net metabolic cost. This 2.5 cm surface variability is comparable to trials, grass, or uneven pavement (Biomechanics and energetics of walking on uneven terrain, 2013). A biomechanical effect that could explain the energetic cost differences was the distribution of work by lower limb joints such as the hip which did 62% more positive work and the knee which did 26% more negative work (Biomechanics and energetics of walking on uneven terrain, 2013). Most of the positive work at the hip happened during mid-stance and also at push-off by increased medial hamstring and rectus femoris activity. This positive work also simultaneously results with negative knee work at the toe-off. The rectus femoris muscle is biarticular flexes the hip and extends the knee, producing high positive work at one joint and negative work at the other. Stride period also increased by ~27% on uneven terrain, suggesting significant variability in timing between push-off and collision (Biomechanics and energetics of walking on uneven terrain, 2013). The adult subjects also modified their landing strategy following heel-strike by having a slightly crouched posture on the uneven terrain. Past research suggested that vertical stiffness decreases by adopting a crouched posture. With the modified landing, ankle angle variability more than doubled on uneven terrain, while the knee and hip variability increased by 30% (Biomechanics and energetics of walking on uneven terrain, 2013).

PSYCHOLOGICAL RESEARCH

As adolescent men and women as they go through maturation face increasing opportunities for competition at higher levels, whether if it is physical or intellectual. It is a time for them to explore different aspects of their identity that are carried onto adulthood. B. Bradford Brown breaks down is exploration into 4 tasks (The Psychology of Adolescence, 2011).

1. To stand out: to develop an identity and pursue autonomy
2. To fit in: to find comfortable affiliations and gain acceptance from peers
3. To measure up: to develop competence and find ways to achieve
4. To take hold: to make commitments to particular goals, activities, and beliefs

Identity formation can consist of gender, ethnicity, and sexual orientation. Adolescents conduct this by recognizing the criteria for these possible identities, evaluate them, and decide how to incorporate them into their persona. An example of this is a young immigrant who needs to learn about the culture of their family the culture into which they have immigrated. Independence is also linked with finding identity which can have positive and negative outcomes. Adolescents can develop healthy and autonomous, relational self by taking on a high

sense of agency (taking responsibility for their own actions) while retaining close connections with significant adults (The Psychology of Adolescence, 2011). If the process goes awry, it can lead to increased risk taking.

Adolescents spend a lot more time with their peers resulting in the drive for affiliation and acceptance. This makes them more open to peer influence and promotes rapid development of new relationships without negotiating the basis for the friendship. This is apparent in the early stages of new relationships or just prior to the development of a new relationship. The development of social competence is important not only for identity development but to gain acceptance from desired peer groups. Impulse control and the regulation of emotions are the two most important skills for social competence (The Psychology of Adolescence, 2011). Individuals with these skills are less likely to manifest aggressive behavior along with forming stable relationships.

According to Robert Wm. Blum, individual traits and skills that can help adolescents navigate adolescence and protect them from risk. These include values, goals, and positive orientation and affiliations that are built in a positive family and community environment. These skills also help with coping with anxiety, stress, and adversity (The Psychology of Adolescence, 2011). This can be applied to adolescent where sports are a developing part of their identity. These young athletes are under increase pressure to perform well in school and their focused sport. These athletes are vulnerable to stress, bullying, burnout and anxiety and may negatively affect the young athlete's behavior under stressful situations, possibly subjecting him or her to sub-par performance or to greater risk of injury. For many of these young athletes, self-worth and self-esteem can be dependent on performance so it is important for coaches, parents, and peers to shape a positive sporting experience in order to develop health psychological and social development among young athletes (Tamminen & Braun, 2017).

Overall individuals' psychosocial experiences throughout maturation are different and attribute to the success of the young individuals that is carried onto adulthood.

USER RESEARCH

Goals & Questions

A questionnaire was made and conducted through video call with Scout BSA troops along with being distributed on an active Scout forum. The user group that is interview are active youth along with some adults participating in Scouts BSA. It focuses on what style of uniform is most popular along with the strengths and weakness of the garments. Questions also dive into garments and brand scouts wear during camping/hiking trips. The questionnaire also narrows down what Scouts wants & needs for uniform and hiking garments. Questions are displayed below (Lau, Scout BSA Apparel Questionnaire, 2021).

Scout BSA Apparel Questionnaire

My name is Bryan Lau. I am a 2nd year Masters student in the University of Oregon's Sports Product Design program. I was in the Scouts BSA in Hawaii and achieved the Eagle Scout Rank back in 2009. I am currently working on my thesis project on Scouting apparel that focuses around inclusivity

Gender

- Male
 - Female
 - Transgender Female
 - Transgender Male
 - Non-Binary
 - Not Listed
 - Prefer not to say
 - Other: _____
-

Age

Your answer _____

How long have you been a Scout?

Your answer _____

What is your current Scout ranking?

Your answer _____

Uniform/Apparel Questions

From the scout uniform catalog located at this link: https://www.scoutshop.org/uniforms/scouts_bsa.html, what uniform styles do you currently own?



Boys or Mens Uniform Short Sleeve Shirt



Youth or Mens Cotton Rich Poplin Uniform Short Sleeve Shirt



Youth or Mens Cotton Rich Poplin Uniform Long Sleeve Shirt



Youth or Mens Polyester Microfiber Uniform Short Sleeve Shirt



Youth Nylon Uniform Long Sleeve Shirt



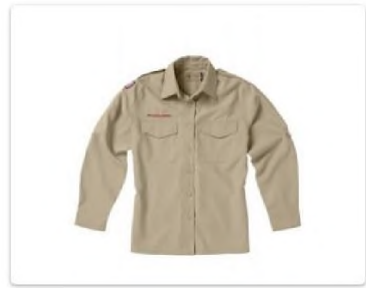
Girls or Womens Uniform Short Sleeve Shirt, Khaki



Womens Cotton Rich Poplin Uniform Short Sleeve Shirt



Womens Cotton Rich Poplin Uniform Long Sleeve Shirt



Womens Polyester Microfiber Uniform Long Sleeve Shirt



Boys or Mens Uniform Short



Boys or Mens Switchback Uniform Pant



Youth or Mens Canvas Uniform Cargo Short



Girls or Womens Uniform Skort, Olive



Womens Canvas Switchback Uniform Pant



Womens Uniform Short



Womens Uniform Roll-Up Pant



Womens Polyester Microfiber Uniform Switchback Pant,



Stretch Fit Adult Uniform Cap



BSA Universal Emblem Printed Neckerchief



BSA Merit Badge Sash

For each of the scout uniform pieces you currently own, what do you wear it for?

Your answer

For each piece, what do you like about them?

Your answer

For each piece, what could be improved about them?

Your answer

13. How important is the scout uniform aesthetics on a scale to 1-10?

1 2 3 4 5 6 7 8 9 10

Not important Very Important

What items of apparel are missing from the scout uniform catalog that you must supplement with your own apparel or have had to purchase in addition to your wardrobe for scouting activities?

Your answer

In your household, who buys your scout uniform?

- Parents / other family member
 - Hand me down
 - I buy it myself
-

What type of apparel do you bring with you for scout hiking or a high adventure activity?

Your answer

What is important for your apparel when you are on a summer hike or on a high adventure activity?

- Staying cool
- Staying warm
- Sun protection
- Staying clean
- Flexibility
- Ventilation/Breathability
- Look
- Modularity
- Light Weight
- Quick Drying
- Packs Easily
- Being Dry
- Fit
- Other: _____

What apparel brands do you like to wear for outdoor activities and why?

Your answer _____

How much do you agree with this statement: The prices of the current scouting uniform items are priced well for what you get.

- I would pay a higher price for better quality products.
- I agree with this statement.
- The scouting uniform is currently too expensive for me and I would be willing to forfeit performance for a lower cost.

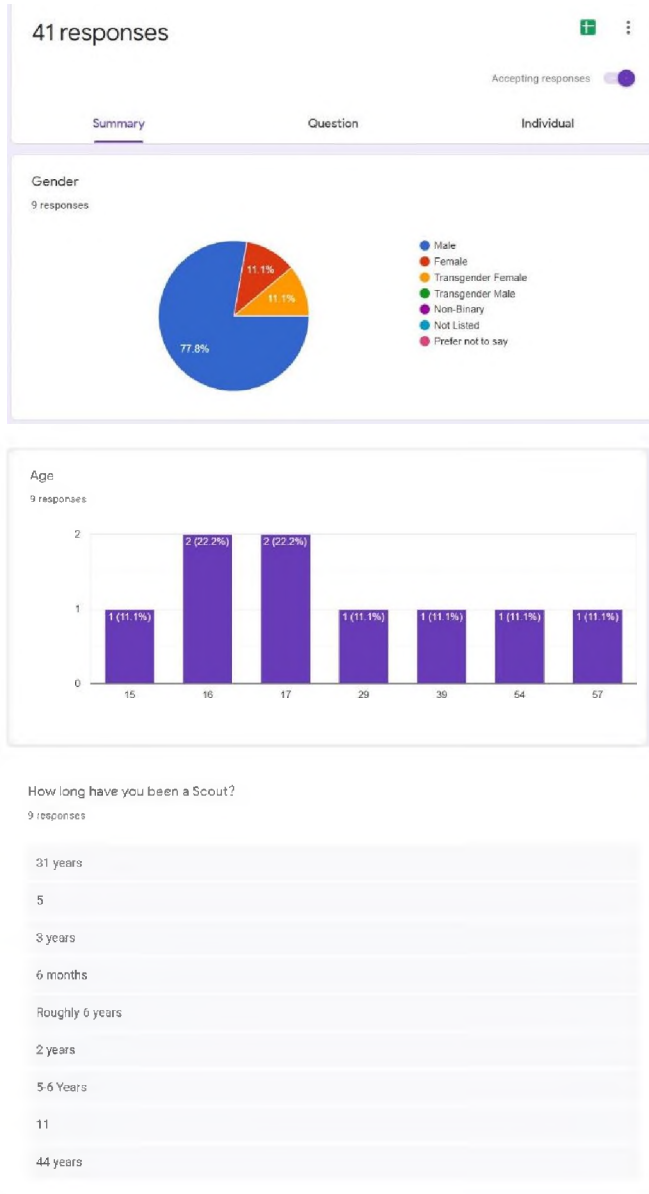
If you could redesign the scout uniform completely, what would you want? How would it look? What items would it include? How would it function? How would it make you feel?

Your answer _____

Figure 48: Scout BSA Apparel Questionnaire
(https://docs.google.com/forms/d/e/1FAIpQLS_jfrOeE4HUTciVcq_jJcxKyq0SXwDm_upH3oGncqA5_T7n77A/viewform?usp=ep_url, 2021)

Responses

Figure 48 below shows the responses to the questionnaire (Lau, Questionnaire Responses, 2021)



What is your current Scout ranking?

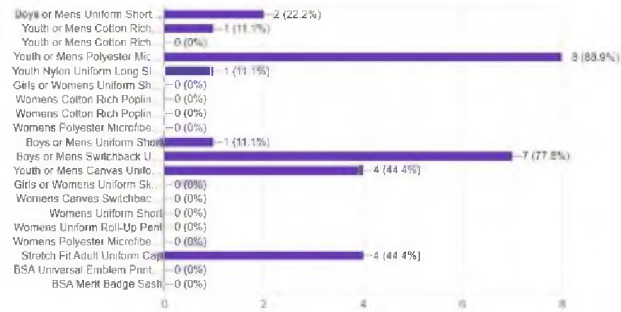
9 responses

Eagle Scout	
Life	
Den leader	
Scout	
First class	
Tenderfoot	
2nd Class	
Assistant Scout Master	
Eagle	

Uniform/Apparel Questions

From the scout uniform catalog located at this link <https://www.scoutshop.org/uniforms/scouts-bsa.html>, what uniform styles do you currently own?

9 responses



For each of the scout uniform pieces you currently own, what do you wear it for?

9 responses

- Scout meetings, training classes, award ceremonies
- Class A Uniform
- All pack functions and leader meetings
- I haven't actually had to wear them yet because Summer camp didn't require them at flag raisings because of COVID.
- Shirt, pants, and a hat sometimes
- Campouts and sometimes meetings
- Any formal scout events, meetings, flag ceremony, summer camp, etc.
- Scout meetings.

For each piece, what do you like about them?

9 responses

- Fairly comfortable and functional
- Relaxing Fit, Good Materials
- They look snazzy and are relatively comfortable
- See above
- All pieces of clothing are very tactical.
- They stay dry longer than normal shirts, pants unzip into shorts, large pockets.
- I like that they are lightweight enough to keep me cool but sturdy enough to not tear.
- Like the ability to roll long sleeve and button. Switchback pants are great.
- Cargo pockets. Fast drying.

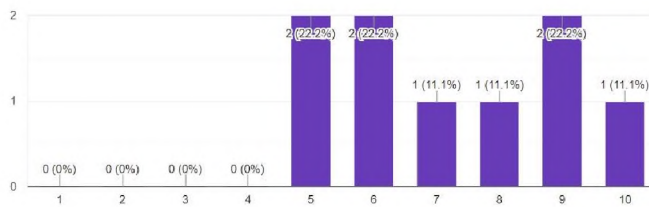
For each piece, what could be improved about them?

8 responses

- Quality of the material, lots of fabric beads around the collar area
- No complaints
- See above
- Maybe just a little lighter and or warm.
-
- The uniform shirt tends to fit oddly about the shoulders and arms, if i raise my arms or reach to far it strains the shirt and pulls it out of my waistband. I am not sure how to fix this but it would certainly make the uniform more comfortable.
- The switchback pants are awesome, but too baggy. Introduction of stretch material, but tighter might be more stylish.
- More comfortable

13. How important is the scout uniform aesthetics on a scale to 1-10?

9 responses



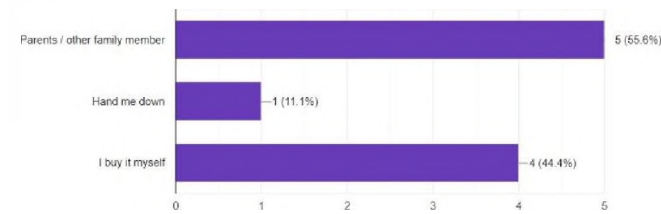
What items of apparel are missing from the scout uniform catalog that you must supplement with your own apparel or have had to purchase in addition to your wardrobe for scouting activities?

8 responses

- Good hiking socks, hiking boots
- Belt
- A belt, swimming gear, when we start doing campouts (we haven't because of COVID) clothes than are unaffected by mud/water could be important
- Im pretty sure I have all of the items required.
- none
- Hiking boots
- Jacket, jumper, hoodie.
- Fleece layer, uniform waterproof breathable outerwear shell

In your household, who buys your scout uniform?

9 responses



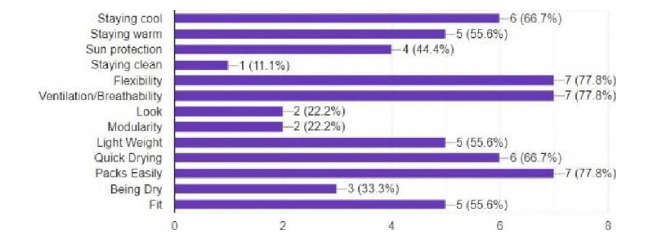
What type of apparel do you bring with you for scout hiking or a high adventure activity?

8 responses

- Class B shirt, hiking shorts/pants, wool socks, boots
- Scout Pants and Belt. On occasion full uniform (such as for Philmont)
- Headwear, all-purpose shoes/shoes that can get wet or dirty, clothes that can get wet/dirty. NO COTTON
- Scout uniform or other tactical/durable clothing.
- long sleeved shirts, shorts, pants, uniform
- Hiking boots, shorts/lightweight pants, t shirt, light jacket, hat
- Hat (as opposed to cap) for cold weather.
- Good hiking socks (Wightsocks), hiking boots (lowa), mountain hardware or Columbia shell, scout microfiber convertible pants, scout belt, scout baseball cap, microfiber t-shirt, Columbia fleece

What is important for your apparel when you are on a summer hike or on a high adventure activity?

5 responses



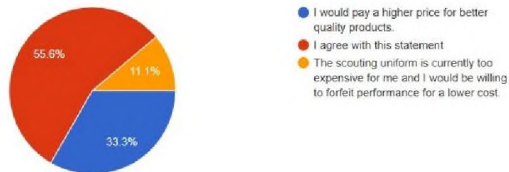
What apparel brands do you like to wear for outdoor activities and why?

7 responses

- REI, Eddie Bauer, Columbia. They are quality products that are comfortable and last.
- Columbia never fails (price isn't super low, but you get a lot for what you pay for: high durability, does all of the above, so on), REI is decent too
- Nike, REI, North Adventure, really anything that fits well and keeps me comfortable in rougher weather conditions
- it depends
- I don't generally have a preferred brand.
- Columbia, NorthFace: functionality, style.
- Columbia, best quality for price. Mountain hardware, comfort and performance. Wrightsock for hiking, double layer high quality, high performance, no blisters

How much do you agree with this statement: The prices of the current scouting uniform items are priced well for what you get.

9 responses



If you could redesign the scout uniform completely, what would you want? How would it look? What items would it include? How would it function? How would it make you feel?

6 responses

- I like the pants a lot. They have pockets and resist the elements well, and can change from long pants to shorts which is good for temperature changes. I think the top could maybe come in two layers or have detachable sleeves so they could also adapt to temperature more.
- Better fitting but also less rigid. The current uniforms are quite stiff and I would rather wear comfortable clothes than be in a stiff uniform. More flexibility, durability, and in general just better quality. This would make me want to wear my uniform more and possibly preferred over casual clothing.
- same except another lighter version of the shorts
- More flexible around the arms and shoulder, dries quickly and wicks moisture well, lightweight.
- Regarding previous question, think higher quality is still possible for lower price. Style and function or about important. UO rebranding of schools for the "new" BSA will be awesome. Are neckerchief really necessary or can it be replaced?
- High quality breathable, quick drying fabric. Possibly high quality composite snaps instead of buttons on front of shirt. Zippers on pockets instead of Velcro or buttons. Better fit and look. Shirt that I would want to

Figure 49 Questionnaire Responses, 2021

**STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREAT ANALYSIS
(S.W.O.T)**

Youth Scouts BSA Cotton Rich Poplin Uniform Long Sleeve Shirt



Figure 50: Scouts BSA Cotton Rich Poplin Uniform Long Sleeve Shirt (<https://www.scoutshcp.org/new-uniforms/boyscouts/girls/boy-scout-youth-long-sleeve-cotton-richpoplin-shirt-606561.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Wrinkle & dirt resistant - Double needle construction for durability - Sun protection UPF Rating 40+ 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for flexibility, breathability and fit 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Collar	<ul style="list-style-type: none"> - Frame for face - Holds neckerchief 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking - Graphic branding 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules - Limited colors
Flap Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Pocket placement affecting functionality
Buttons	<ul style="list-style-type: none"> - Secures shirt together 	<ul style="list-style-type: none"> - Prone to falling off 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction - Uniform rules
Long Sleeves	<ul style="list-style-type: none"> - Sun protection UPF rating 40+ - Protection from the elements 	<ul style="list-style-type: none"> - Less breathability 	<ul style="list-style-type: none"> - Zoning for flexibility for shoulder and elbows 	<ul style="list-style-type: none"> - Uniform rules - Limited colors

			- Zoning for breathability and fit	
Epaulets	- Hold shoulder loops	- No further benefits	- Better closure system	- Uniform rules - Simple construction - Limited colors
Back Pleats & Hem	- Extra movement on shoulder and arms	- No further benefits	- Zoning for back breathability and flexibility	- Uniform rules - Simple construction

Youth Cotton Rich Poplin Uniform Short Sleeve Shirt



Figure 51: Scouts BSA Cotton Rich Poplin Uniform Short Sleeve Shirt (<https://www.scoutshcp.org/new-uniforms/boy-scouts/girls/boy-scout-youth-short-sleeve-cotton-rich-poplin-shirt-606757.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Loose fit for mobility - Wrinkle & dirt resistant - Double needle construction for added durability	- No further benefits	- Zoning for flexibility, breathability and fit	- Cost to make - Basic silhouette - Uniform rules - Limited colors
Collar	- Frame for face - Holds neckerchief	- No further benefits	- Zoning for moisture wicking - Graphic branding	- Basic silhouette - Uniform rules - Limited colors
Flap Pockets	- Hold small items	- No further benefits	- Better closure system	- Pocket placement affecting functionality

Buttons	- Secures shirt together	- Prone to falling off	- Better closure system	- Simple construction - Uniform rules
Short Sleeves	- Breathability - Elbow flexibility	- Less warmth & protection from the elements	- Zoning for flexibility for shoulder	- Uniform rules - Limited colors
Epaulets	- Hold shoulder loops	- No further benefits	- Better closure system	- Uniform rules - Simple construction
Back Pleats & Hem	- Extra movement on shoulder and arms	- No further benefits	- Zoning for back breathability and flexibility	- Uniform rules - Simple construction

Boy's Scouts BSA Uniform Short Sleeve Shirt



Figure 52: Scouts BSA Uniform Short Sleeve Shirt, Boys' (<https://www.scoutshop.org/scouts-bsa-boys-uniform-short-sleeve-shirt-khaki-xs-xl.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Loose fit for mobility	- No further benefits	- Zoning for flexibility, breathability and fit	- Cost to make - Basic silhouette - Uniform rules - Limited colors
Collar	- Frame for face - Holds neckerchief	- No further benefits	- Zoning for moisture wicking - Graphic branding	- Basic silhouette - Uniform rules - Limited colors

Flap Pockets	- Hold small items	- No further benefits	- Better closure system	- Pocket placement affecting functionality
Buttons	- Secures shirt together	- Prone to falling off	- Better closure system	- Simple construction - Uniform rules
Short Sleeves	- Breathability - Elbow flexibility	- Less warmth & protection from the elements	- Zoning for flexibility for shoulder	- Uniform rules - Limited colors
Epaulets	- Hold shoulder loops	- No further benefits	- Better closure system	- Uniform rules - Simple construction
Back Side Vents	- Added breathability	- No further benefits	- Different material can be used and can also add flexibility	- Uniform rules - Simple construction

Youth Scouts BSA Nylon Uniform Long Sleeve Shirt



Figure 53: Scouts BSA Nylon Uniform Long Sleeve Shirt, Youth
 (<https://www.scoutshcp.org/boy-scout-long-sleeve-nylon-youth-shirt-606139.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Loose fit for mobility - Moisture wicking - Sun protection UPF Rating 40+	- No further benefits	- Zoning for flexibility, breathability and fit	- Cost to make - Basic silhouette - Uniform rules - Limited colors

Collar	<ul style="list-style-type: none"> - Frame for face - Holds neckerchief 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Graphic branding 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules - Limited colors
Flap Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Pocket placement affecting functionality
Buttons	<ul style="list-style-type: none"> - Secures shirt together 	<ul style="list-style-type: none"> - Prone to falling off 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction - Uniform rules
Long Sleeves	<ul style="list-style-type: none"> - Sun protection UPF rating 40+ - Protection from the elements 	<ul style="list-style-type: none"> - Less breathability 	<ul style="list-style-type: none"> - Zoning for flexibility for shoulder and elbows - Zoning for breathability and fit 	<ul style="list-style-type: none"> - Uniform rules - Limited colors
Epaulets	<ul style="list-style-type: none"> - Hold shoulder loops 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Uniform rules - Simple construction

Youth Scouts BSA Polyester Microfiber Uniform Short Sleeve Shirt



Figure 54: Scouts BSA Polyester Microfiber Uniform Short Sleeve Shirt, Youth (<https://www.scoutshop.org/new-uniforms/boy-scouts/girls/boy-scout-youth-short-sleeve-polyester-microfiber-shirt-612149.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Prevents odor-causing bacteria - Moisture wicking 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for flexibility, breathability and fit 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Collar	<ul style="list-style-type: none"> - Frame for face - Holds neckerchief 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking - Graphic branding 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules - Limited colors
Flap Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Pocket placement affecting functionality
Buttons	<ul style="list-style-type: none"> - Secures shirt together 	<ul style="list-style-type: none"> - Prone to falling off 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction - Uniform rules
Short Sleeves	<ul style="list-style-type: none"> - Breathability - Elbow flexibility 	<ul style="list-style-type: none"> - Less warmth & protection from the elements 	<ul style="list-style-type: none"> - Zoning for flexibility for shoulder 	<ul style="list-style-type: none"> - Uniform rules - Limited colors
Epaulets	<ul style="list-style-type: none"> - Hold shoulder loops 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Uniform rules - Simple construction
Back Mesh Yolk	<ul style="list-style-type: none"> - Breathability on back 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Different material can be used and can also add flexibility 	<ul style="list-style-type: none"> - Uniform rules - Simple construction

Girl's Scouts BSA Girls Uniform Short Sleeve Shirt, Khaki



Figure 55: Scouts BSA Girls Uniform Short Sleeve Shirt, Khaki (<https://www.scoutshop.org/scouts-bsa-girls-uniform-short-sleeve-shirt-khaki.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Loose fit for mobility	- No further benefits	- Zoning for flexibility, breathability and fit	- Cost to make - Basic silhouette - Uniform rules - Limited colors
Collar	- Frame for face - Holds neckerchief	- No further benefits	- Zoning for moisture wicking - Graphic branding	- Basic silhouette - Uniform rules - Limited colors
Flap Pockets	- Hold small items	- No further benefits	- Better closure system	- Pocket placement affecting functionality
Hidden Buttons Placket	- Secures shirt together - Easy to put on and off	- No further benefits	- Better closure system	- Simple construction - Uniform rules
Short Sleeves	- Breathability - Elbow flexibility	- Less warmth & protection from the elements	- Zoning for flexibility for shoulder	- Uniform rules - Limited colors
Epaulets	- Hold shoulder loops	- No further benefits	- Better closure system	- Uniform rules - Simple construction
Back Mesh Yolk	- Breathability on back	- No further benefits	- Different material can be used and	- Uniform rules - Simple construction

			can also add flexibility	
Back Side Vent	- Added breathability	- No further benefits	- Different material can be used and can also add flexibility	- Uniform rules - Simple construction

Boy's Scouts BSA Switchback Uniform Pant



Figure 56: Scouts BSA Switchback Uniform Pant, Boys' (<https://www.scoutshcp.org/scouts-bsa-boy-s-uniform-switchback-pant-olive-8-20.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Long pant for warmth and protection - Shorts for added mobility and breathability 	<ul style="list-style-type: none"> - Shorts can be too long and still be uncomfortable in hot weather 	<ul style="list-style-type: none"> - Zoning for durability, flexibility, breathability in long pants mode - Zoning shorts length to be comfortable in hot weather 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer - Elastic allows form fit around 	<ul style="list-style-type: none"> - Elastic loses tension over time - Elastic by itself does not 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette

	various body types	guarantee a secure fit		
Front & Back Pockets	- Hold small items	- Objects placed in pockets interfere with leg movement	- Better closure system - Pocket placement	- Basic silhouette
Cargo Pockets	- Holds small items - Pocket flap prevents items from falling out	- Objects placed in pockets interfere with leg movement	- Better closure system - Pocket style	- Simple construction
Back Yolk	- Improved fit on waist	- No further benefits	- Zoning for moisture wicking and durability	- Simple construction
Fly Zipper	- Allows pants to open and close for easy on & off	- No further benefits	- Better closure system	- Simple construction
Zipper off Leg	- Modularity from pants to shorts	- Zippering may break during trip - Zipper can cause discomfort and interfere with leg movement	- Better system to secure pant to short and does not interfere with leg movement	- Simple construction - Uniform rules - Limited colors

Boy's Canvas Switchback Uniform Pant



Figure 57: Scouts BSA Canvas Uniform Switchback Pant, Youth (<https://www.scoutshop.org/new-uniforms/boy-scouts/girls/boy-scout-youth-canvas-convertible-pants-606130.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Long pant for warmth and protection - Shorts for added mobility and breathability 	<ul style="list-style-type: none"> - Shorts can be too long and still be uncomfortable in hot weather 	<ul style="list-style-type: none"> - Zoning for durability, flexibility, breathability in long pants mode - Zoning shorts length to be comfortable in hot weather 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer 	<ul style="list-style-type: none"> - Elastic loses tension over time - Elastic by itself does not guarantee a secure fit 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette
Cargo Pockets	<ul style="list-style-type: none"> - Holds small items - Pocket flap prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction
Zipper off Leg	<ul style="list-style-type: none"> - Modularity from pants to shorts 	<ul style="list-style-type: none"> - Zippering may break during trip - Zipper can cause discomfort and interfere with leg movement 	<ul style="list-style-type: none"> - Better system to secure pant to short and does not interfere with leg movement 	<ul style="list-style-type: none"> - Simple construction - Uniform rules - Limited colors

Youth Scouts BSA Canvas Uniform Cargo Short



Figure 58: Scouts BSA Canvas Uniform Cargo Short, Youth (<https://www.scoutshop.org/new-uniforms/boy-scouts/girls/boy-scout-uniform-canvas-cargo-shorts-youth-612948.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Shorts for added mobility and breathability - Wrinkle resistant - Soft hand 	<ul style="list-style-type: none"> - Does not provide warmth and protection from elements & nature 	<ul style="list-style-type: none"> - Zoning for durability, flexibility, breathability in long pants mode - Zoning shorts length to be comfortable in hot weather 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer 	<ul style="list-style-type: none"> - Fit is limited for body types 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette
Cargo Pockets	<ul style="list-style-type: none"> - Holds small items - Pocket flap prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction
Back Yolk	<ul style="list-style-type: none"> - Improved fit on waist 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture 	<ul style="list-style-type: none"> - Simple construction

			wicking and durability	
Fly Zipper	- Allows pants to open and close for easy on & off	- No further benefits	- Better closure system	- Simple construction

Boy's Scouts BSA Uniform Short



Figure 59: Scouts BSA Uniform Short, Boys' (<https://www.scoutshcp.org/scouts-bsa-boy-s-uniform-short-olive-8-20.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Shorts for added mobility and breathability 	<ul style="list-style-type: none"> - Does not provide warmth and protection from elements & nature 	<ul style="list-style-type: none"> - Zoning for durability, flexibility, breathability in long pants mode - Zoning shorts length to be comfortable in hot weather 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer 	<ul style="list-style-type: none"> - Fit is limited for body types 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette

Cargo Pockets	<ul style="list-style-type: none"> - Holds small items - Pocket flap prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction
Back Yolk	<ul style="list-style-type: none"> - Improved fit on waist 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking and durability 	<ul style="list-style-type: none"> - Simple construction
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction

Girl's Scouts BSA Roll-Up Uniform Pant



Figure 60: Scouts BSA Roll-Up Uniform Pant, Girls' (<https://www.scoutshcp.org/new-uniforms/boy-scouts/scouts-bsa-roll-up-uniform-pant-girls-648629.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Long pant for warmth and protection - Rolled up capris for added mobility and breathability 	<ul style="list-style-type: none"> - Capris can be too long and still be uncomfortable in hot weather - Long process from rolling pants to capris 	<ul style="list-style-type: none"> - Zoning for durability, flexibility, breathability in long pants mode - Getting rid of capris and making convertible pant for girls 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors

Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer - Elastic allows form fit around various body types 	<ul style="list-style-type: none"> - Elastic loses tension over time - Elastic by itself does not guarantee a secure fit 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette
Cargo Pockets	<ul style="list-style-type: none"> - Holds small items - Pocket flap prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction
Back Yolk	<ul style="list-style-type: none"> - Improved fit on waist 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking and durability 	<ul style="list-style-type: none"> - Simple construction
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction
Button Leg Fasteners for Capris	<ul style="list-style-type: none"> - Modularity from pants to capris - Secures the rolled pant leg from movement 	<ul style="list-style-type: none"> - Button can cause discomfort and interfere with leg movement 	<ul style="list-style-type: none"> - Getting rid of capris and making convertible pant for girls 	<ul style="list-style-type: none"> - Simple construction - Uniform rules - Limited colors

Girl's Scouts BSA Girl's Uniform Skort, Olive



Figure 61: Scouts BSA Girl's Uniform Skort, Olive
 (<https://www.scoutshcp.org/shcp-by-scout/boy-scouts/bottoms/scouts-bsa-girl-s-uniform-skort-olive.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose fit for mobility - Polished uniform look 	<ul style="list-style-type: none"> - Does not provide warmth and protection from elements & nature 	<ul style="list-style-type: none"> - New materials for comfort and functionality - Modern silhouette 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer - Elastic allows form fit around various body types 	<ul style="list-style-type: none"> - Elastic loses tension over time - Elastic by itself does not guarantee a secure fit 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette - Uniform rules
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette
Zippered Welt Pockets	<ul style="list-style-type: none"> - Holds small items - Pocket flap prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction

Shorts Liner	- Breathability and moisture wicking	- No further benefits	- Updated materials - Update silhouette	- Simple construction
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Girl's Scouts BSA Uniform Short



Figure 62: Scouts BSA Uniform Short, Girls' (<https://www.scoutshcp.org/new-uniforms/boy-scouts/scouts-bsa-girls-uniform-short-648809.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Loose fit for mobility - Shorts for added mobility and breathability	- Does not provide warmth and protection from elements & nature	- Zoning for durability, flexibility, breathability in long pants mode - Zoning shorts length to be comfortable in hot weather -	- Cost to make - Basic silhouette - Uniform rules - Limited colors
Waistband & Belt Loops	- Belt loops secures pants on wearer	- Fit is limited for body types	- Zoning for moisture wicking	- Basic silhouette - Uniform rules
Front & Back Pockets	- Hold small items	- Objects placed in pockets interfere with leg movement	- Better closure system - Pocket placement	- Basic silhouette
Cargo Pockets	- Holds small items	- Objects placed in pockets	- Better closure system	- Simple construction

	- Pocket flap prevents items from falling out	interfere with leg movement	- Pocket style	
Back Yolk	- Improved fit on waist	- No further benefits	- Zoning for moisture wicking and durability	- Simple construction
Fly Zipper	- Allows pants to open and close for easy on & off	- No further benefits	- Better closure system	- Simple construction

Boy Scouts of America Stretch Fit Adult Uniform Cap



Figure 63: Boy Scouts of America Stretch Fit Adult Uniform Cap - S/M (<https://www.scoutshop.org/boy-scouts-of-america-stretch-fit-adult-uniform-cap-s-m-622367.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Visor	- Sun protection from front of face	- Does not protect neck or ears	- Adding neck cape for 360 protections - Graphic branding	- Uniform Rules - Limited Colors - Basic silhouette
Crown	- Sun protection on top of head	- Basic pattern, - Does not provide other benefits	- Unique pattern focusing on breathability - Update materials for moisture wicking	- Uniform Rules - Limited Colors - Basic silhouette
Eyelets	- Head breathability	- Minimal breathability	- Get rid of eyelets and	- Basic silhouette

			have a pattern that focusing on breathability - Graphic branding	
Stretch Sweatband	- Wicks sweat from around head	- Limited fit	- Adding adjustable strap - New materials for quick drying	- Basic silhouette

Men's & Women's LizardHead Raglan Hoodie



Figure 64: LizardHead Raglan Hoodie, Maroon
 (<https://www.scoutshop.org/lizardhead-raglan-hoodie-maroon-653033.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Protects back and front from the sun - Thin material allows user to wear in warmer weather - Light weight	- No pockets - Does not look associated with scouts	- Pockets, lining, water proofing, wind resistance - New silhouette - Scout branding	- Cost to make - Basic silhouette
Long Sleeve	- Protects arms from sun	- No further benefits	- Focused areas for shoulder and elbow flexibility	- Cost to make - Basic silhouette

Hoodie	- Protects head from elements	- Not adjustable	- Adjustable hood - Added stability on hood for better fit	- Cost to make - Basic silhouette
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Men's & Women's LizardHead Quilted Vest



Figure 65: LizardHead Men's Quilted Vest
(<https://www.scoutshop.org/lizardhead-mens-quilted-vest-653178.html>, n.a)



Figure 66: LizardHead Ladies Quilted Vest
(<https://www.scoutshop.org/lizardhead-ladies-quilted-vest-653159.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	- Protects back and front from elements - Front zipper closure - Quilted down keeps wearers torso warm	- Does not look associated with scouts	- Sleeves, water proofing, wind resistance - New silhouette - Scout branding	- Cost to make - Basic silhouette
Collar	- Protect neck from elements - Keeps neck warm in cold weather	- No further benefits	- New materials for moisture wicking and added comfort	- Cost to make - Basic silhouette
Side Zipper Pockets	- Zipper secures small items in pocket	- Zipper can easily break - Hard to open with gloves	- New closure system	- Cost to make - Basic silhouette

	- Pockets also provide some hand warmth			
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Women's LizardHead Ladies Tunic



Figure 67: LizardHead Ladies Tunic
 (<https://www.scoutshop.org/lizardhead-ladies-tunic-653197.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Protects back and front from elements - Light weight 	<ul style="list-style-type: none"> - Does not look associated with scouts 	<ul style="list-style-type: none"> - Focused areas for breathability - New silhouette - Scout branding 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette
Drape Neck Collar	<ul style="list-style-type: none"> - Protect neck from elements - Keeps neck warm in cold weather 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - New materials for moisture wicking and added comfort - Minimize the collar 	<ul style="list-style-type: none"> - Cost to make - Collar style may not be needed
Roll Up Sleeves	<ul style="list-style-type: none"> - Allows modularity from long to short sleeve 	<ul style="list-style-type: none"> - Rolled up fabric causes discomfort and affects mobility 	<ul style="list-style-type: none"> - Focused areas for breathability and flexibility on 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette

			forearms and elbows	
Side Pockets	<ul style="list-style-type: none"> - Hold small items in pocket - Pockets also provide some hand warmth 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Unique pocket pattern - Scout branding 	<ul style="list-style-type: none"> - Cost to make - Basic silhouette
Sleeve Button	<ul style="list-style-type: none"> - Secure rolled sleeve 	<ul style="list-style-type: none"> - May cause discomfort 	<ul style="list-style-type: none"> - Better securing system - Do away with the button 	<ul style="list-style-type: none"> - Basic silhouette
Front ¼ Buttons	<ul style="list-style-type: none"> - Allows for easy on an off 	<ul style="list-style-type: none"> - No further benefit 	<ul style="list-style-type: none"> - Update buttons - Full button down 	<ul style="list-style-type: none"> - Basic silhouette
Back Vent	<ul style="list-style-type: none"> - Added breathability on the back 	<ul style="list-style-type: none"> - No further benefit 	<ul style="list-style-type: none"> - Update materials to moisture wick 	<ul style="list-style-type: none"> - Basic silhouette

Outdoor Research Helium Jacket



Figure 68 :Outdoor Research Helium Jacket
 (https://www.rei.com/product/166198/outdoor-research-helium-rain-jacket-mens?cm_mmc=c_s_f_AL--197113--249277--NA&avad=249277_e24bd3f79, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Medium fit for some mobility - Wind proof - Waterproof - Breathable - Light weight 	<ul style="list-style-type: none"> - Does not provide much warmth - Takes a long time to dry 	<ul style="list-style-type: none"> - Focused areas for arm and shoulder mobility - Focused areas for high wear spots - Back panel focusing on moisture wicking and quick drying 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams
Sleeves	<ul style="list-style-type: none"> - Loose fit for mobility 	<ul style="list-style-type: none"> - No areas focused on shoulder and elbow flexibility 	<ul style="list-style-type: none"> - New materials and patterns focused on flexibility - Focused areas for high wear spots 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams
Adjustable Hood	<ul style="list-style-type: none"> - Head protection 	<ul style="list-style-type: none"> - Draw cord location is hard to use 	<ul style="list-style-type: none"> - New placement of draw cord 	<ul style="list-style-type: none"> - Hardware can cause

	<ul style="list-style-type: none"> from the elements - Provide head some insulation - Adjustable for better fit 		<ul style="list-style-type: none"> - Update hardware 	<ul style="list-style-type: none"> some discomfort
Front Zipper	<ul style="list-style-type: none"> - Easy opening and closing for front of jacket 	<ul style="list-style-type: none"> - Light weight zipper breaks easier than its heavier counterpart 	<ul style="list-style-type: none"> - Update hardware 	<ul style="list-style-type: none"> - Hardware can cause some discomfort and add weight
Elastic Draw Cord Hem	<ul style="list-style-type: none"> - Allows for better fit around torso 	<ul style="list-style-type: none"> - Elastic can wear over time and break 	<ul style="list-style-type: none"> - Update hardware 	<ul style="list-style-type: none"> - Hardware can cause some discomfort and add weight
Zipper Chest Pocket	<ul style="list-style-type: none"> - Store small items - Allows for jacket to be stuffed in pocket 	<ul style="list-style-type: none"> - Only pocket on jacket 	<ul style="list-style-type: none"> - Update hardware - Adding pockets 	<ul style="list-style-type: none"> - Hardware can cause some discomfort and add weight - Material weight
Elastic Cuffs	<ul style="list-style-type: none"> - Keeps moisture and draft from going into jacket 	<ul style="list-style-type: none"> - Not added benefits 	<ul style="list-style-type: none"> - Updated materials for moisture wicking when it gets wet 	<ul style="list-style-type: none"> - Material weight
Carabiner Loop	<ul style="list-style-type: none"> - Attaching to harness 	<ul style="list-style-type: none"> - No added benefits 	<ul style="list-style-type: none"> - Modernized harness loop system 	<ul style="list-style-type: none"> - Material weight
Reflective logo & Form Arm Overlays	<ul style="list-style-type: none"> - Allows for easy visibility 	<ul style="list-style-type: none"> - No added benefit - Should be placed in other parts of the body 	<ul style="list-style-type: none"> - Can be used for Scout branding - Reflective overlay on hood and bottom hem 	<ul style="list-style-type: none"> - How much reflective should be used

Columbia FKT II Windbreaker Jacket



Figure 69: Columbia FKT II Windbreaker Jacket
 (<https://climbinggearreviewsuk.files.wordpress.com/2019/05/fkt-wind-jacket.jpeg?w=536&h=536&crop=1&zoom=2, n.a>)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Medium fit for some mobility - Weather proofing 	<ul style="list-style-type: none"> - Does not provide much warmth - Take a long time to dry 	<ul style="list-style-type: none"> - Focused areas for high wear spots - Back panel focusing on moisture wicking and quick drying 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams
Sleeves	<ul style="list-style-type: none"> - Loose fit for mobility 	<ul style="list-style-type: none"> - No areas focused on shoulder and elbow flexibility 	<ul style="list-style-type: none"> - New materials and patterns focused on flexibility - Focused areas for high wear spots 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams
Front Zipper	<ul style="list-style-type: none"> - Easy opening and closing for front of jacket 	<ul style="list-style-type: none"> - Light weight zipper breaks easier than its heavier counterpart 	<ul style="list-style-type: none"> - Update hardware 	<ul style="list-style-type: none"> - Hardware can cause some discomfort and add weight
Zipper closed pocket & Hand Pockets	<ul style="list-style-type: none"> - Store small items - Keeps hands warm 	<ul style="list-style-type: none"> - Simple construction 	<ul style="list-style-type: none"> - Update hardware - Adding pockets 	<ul style="list-style-type: none"> - Hardware can cause some discomfort

				and add weight - Material weight
Elastic Cuffs	- Keeps moisture and draft from going into jacket	- Not added benefits	- Updated materials for moisture wicking when it gets wet - Added reflective finish	- Material weight
Stuff-able Sack	- Allows jacket to be packable and dense	- No added benefits - Can be hard to use	- Material that doesn't wrinkle - Pocket that is easier to use	- Material weight

Men's Columbia Silver Ridge Lite Long-Sleeve Shirt



Figure 70: Columbia Silver Ridge Lite Long-Sleeve Shirt - Men's
 (https://www.rei.com/product/895032/columbia-silver-ridge-lite-long-sleeve-shirt-mens?cm_mmc=c_s_f_AL_-197113_-249277_-NA&avad=249277_j254c202a)

	Strength	Weaknesses	Opportunities	Threats
Body & Back Vents	- Medium fit for some mobility - Moisture wicking	- Simple silhouette - Panels for underarm flexibility	- Focused panels for flexibility - Reinvent the back vents to look	- Cannot add too much material to add weight and added seams

	<ul style="list-style-type: none"> - Antimicrobial treatment - Back vents for breathability 		aesthetically pleasing	
Sleeves & roll up tabs	<ul style="list-style-type: none"> - Loose fit for mobility - Roll up tabs allow for short sleeve option - Moisture wicking - Antimicrobial treatment 	<ul style="list-style-type: none"> - No areas focused on shoulder and elbow flexibility - Rolled up sleeve can affect arm mobility 	<ul style="list-style-type: none"> - Focused panels for flexibility - Zip off arm or a new way to convert from long to short sleeve without affecting mobility 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams - Finding hardware that does not add discomfort - Finding a modular sleeve length that allows for more breathability without affecting flexibility
Button Front Closure	<ul style="list-style-type: none"> - Keep shirt closed to protect chest from the elements - Easy to use - Aesthetically pleasing 	<ul style="list-style-type: none"> - Buttons can break easily 	<ul style="list-style-type: none"> - Finding a new closure system that is durable and easy to use 	<ul style="list-style-type: none"> - Hardware may add weight or cause discomfort
Chest Flap Pockets	<ul style="list-style-type: none"> - Carries small items can be easily accessed 	<ul style="list-style-type: none"> - Flap do not securely hold the items - Simple silhouette 	<ul style="list-style-type: none"> - New pocket placement or closure system 	<ul style="list-style-type: none"> - Hardware may add weight or cause discomfort

Women's REI Co-op Sahara Button-Up Long-Sleeve Shirt (REI Co-op Sahara Button-Up Long-Sleeve Shirt - Women's, n.d.)



Figure 71: REI Co-op Sahara Button-Up Long-Sleeve Shirt - Women's (<https://www.rei.com/product/120043/rei-co-op-sahara-button-up-long-sleeve-shirt-womens>)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Medium fit for some mobility - Moisture wicking - Antimicrobial treatment - Spandex allows for some flexibility 	<ul style="list-style-type: none"> - Simple silhouette - Panels for underarm flexibility 	<ul style="list-style-type: none"> - Updated silhouette - Focused areas for flexibility 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams
Sleeves & roll up buttons	<ul style="list-style-type: none"> - Loose fit for mobility - Roll up buttons to rolled up short sleeve option - Moisture wicking 	<ul style="list-style-type: none"> - No areas focused on shoulder and elbow flexibility - Rolled up sleeve can affect arm mobility - Button can be difficult to use on the arm and break easily 	<ul style="list-style-type: none"> - Focused panels for flexibility - Zip off arm or a new way to convert from long to short sleeve without affecting mobility 	<ul style="list-style-type: none"> - Cannot add too much material to add weight and added seams - Finding hardware that does not add discomfort - Finding a modular sleeve length that allows for more breathability without

				affecting flexibility
Button Front Closure	<ul style="list-style-type: none"> - Keep shirt closed to protect chest from the elements - Easy to use - Aesthetically pleasing 	<ul style="list-style-type: none"> - Buttons can break easily 	<ul style="list-style-type: none"> - Finding a new closure system that is durable and easy to use 	<ul style="list-style-type: none"> - Hardware may add weight or cause discomfort
Snap Chest Pockets	<ul style="list-style-type: none"> - Carries small items can be easily accessed - Snap can securely hold the items 	<ul style="list-style-type: none"> - Simple silhouette 	<ul style="list-style-type: none"> - New pocket placement or closure system 	<ul style="list-style-type: none"> - Hardware may add weight or cause discomfort

Columbia Men’s Silver Ridge Convertible Hiking Pants



Figure 72: Men’s Silver Ridge™ Convertible Pants (<https://www.columbia.com/p/mens-silver-ridge-convertible-pants-AM8004.html>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose straight fit for mobility and slim silhouette - Long pant for warmth and protection 	<ul style="list-style-type: none"> - Shorts can be too long and still be uncomfortable in hot weather 	<ul style="list-style-type: none"> - Zoning for durability and flexibility - Finding short length to be comfortable 	<ul style="list-style-type: none"> - Cost to make - Material weight

	<ul style="list-style-type: none"> - Shorts for added mobility and breathability - Inner Mesh panels for wicking 		in hot weather	
Waistband & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer - Elastic allows form fit around various body types 	<ul style="list-style-type: none"> - Elastic loses tension over time - Elastic by itself does not guarantee a secure fit 	<ul style="list-style-type: none"> - Zoning for moisture wicking 	<ul style="list-style-type: none"> - Basic silhouette - Material weight
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette - Material weight
Zip-Closed Pockets	<ul style="list-style-type: none"> - Holds small items - Zipper prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction - Material weight
Back Yolk	<ul style="list-style-type: none"> - Improved fit on waist 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking and durability 	<ul style="list-style-type: none"> - Simple construction - Material weight
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction
Zipper off Leg	<ul style="list-style-type: none"> - Modularity from pants to shorts 	<ul style="list-style-type: none"> - Zippering may break during trip - Zipper can cause discomfort and interfere with leg movement 	<ul style="list-style-type: none"> - Better system to secure pant to short and does not interfere with leg movement 	<ul style="list-style-type: none"> - Simple construction - Material weight
Mesh Pocket Bag	<ul style="list-style-type: none"> - Light weight pocket - Allows for breathability - Prevents water from 	<ul style="list-style-type: none"> - Can easily be damaged 	<ul style="list-style-type: none"> - Update material to a durable mesh with smaller 	<ul style="list-style-type: none"> - Simple construction - Material weight

	accumulating in pockets when wet		openings in fabric	
Gusset	<ul style="list-style-type: none"> - Added leg mobility - Disperse stress in crotch area 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Update material to be breathable around the crotch 	<ul style="list-style-type: none"> - Simple construction

REI Women's Saturday Convertible Pants



Figure 73: <https://www.rei.com/product/881059/columbia-saturday-trail-convertible-pants-womens?color=INDIA%20INK,n.a>

	Strength	Weaknesses	Opportunities	Threats
Body	<ul style="list-style-type: none"> - Loose straight fit for mobility and slim silhouette - Long pant for warmth and protection - Shorts for added mobility and breathability 	<ul style="list-style-type: none"> - Shorts can be too long and still be uncomfortable in hot weather 	<ul style="list-style-type: none"> - Zoning for durability and flexibility - Finding short length to be comfortable in hot weather 	<ul style="list-style-type: none"> - Cost to make - Material weight

Waistband, Belt Buckle & Belt Loops	<ul style="list-style-type: none"> - Belt loops secures pants on wearer - Elastic allows form fit around various body types - Buckle allows easy adjustability without need of belt 	<ul style="list-style-type: none"> - Elastic loses tension over time 	<ul style="list-style-type: none"> - Zoning for moisture wicking and added comfort 	<ul style="list-style-type: none"> - Basic silhouette - Material weight
Front & Back Pockets	<ul style="list-style-type: none"> - Hold small items 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket placement 	<ul style="list-style-type: none"> - Basic silhouette - Material weight
Zip-Closed Pockets	<ul style="list-style-type: none"> - Holds small items - Zipper prevents items from falling out 	<ul style="list-style-type: none"> - Objects placed in pockets interfere with leg movement 	<ul style="list-style-type: none"> - Better closure system - Pocket style 	<ul style="list-style-type: none"> - Simple construction - Material weight
Back Yolk	<ul style="list-style-type: none"> - Improved fit on waist 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Zoning for moisture wicking and durability 	<ul style="list-style-type: none"> - Simple construction - Material weight
Fly Zipper	<ul style="list-style-type: none"> - Allows pants to open and close for easy on & off 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - Better closure system 	<ul style="list-style-type: none"> - Simple construction
Zipper off Leg	<ul style="list-style-type: none"> - Modularity from pants to shorts - Color coated to tell from left leg from the right leg 	<ul style="list-style-type: none"> - Zippering may break during trip - Zipper can cause discomfort and interfere with leg movement 	<ul style="list-style-type: none"> - Better system to secure pant to short and does not interfere with leg movement 	<ul style="list-style-type: none"> - Simple construction - Material weight
High Thigh Zipper	<ul style="list-style-type: none"> - Opens up leg to fit shoe without pant bulging - Added breathability without 	<ul style="list-style-type: none"> - Gets in the way of walking if zipped up all the way - Gets dirty easily 	<ul style="list-style-type: none"> - Adding vents rather than zippering up leg 	<ul style="list-style-type: none"> - Simple construction - Material weight

	removing zippered leg	- Zipper can break easily		
Center Gusset	- Added leg mobility - Disperse stress in crotch area	- No further benefits	- Update material to be breathable around the crotch	- Simple construction

Sunday Afternoons Ultra Adventure Hat



Figure 74: Sunday Afternoons Ultra Adventure Hat
 (https://www.rei.com/product/894435/sunday-afternoons-ultra-adventure-hat?cm_mmc=cjf_AL-_-157226-_-196286-_-NA&avad=196286_c24t,f6329,n.a)

	Strength	Weaknesses	Opportunities	Threats
Clamshell Brim	- Half head protection from sun	- No further benefit	- Can convert to half moon brim for wearability outside of hiking	- Basic silhouette
Neck Cape	- Neck and ear protection from sun	- Basic pattern - No Further benefits	- Unique pattern focusing on breathability	- Basic silhouette
Sunglass lock	- Secure sunglasses on head	- No further benefits	- Find a new way to secure sunglasses on hat	- Basic silhouette

Sweatband	- Wicks sweat from around head	- No Further Benefits	- New materials for quick drying and easy cleaning	- Basic silhouette
Crown Vents	- Allows breathability on top of head	- Mush is not very durable - Can let head escape from head if in cold weather	- New materials for quick drying and easy cleaning - Closing system when weather gets cold	- Basic silhouette
Adjustable Draw String	- Secures hat to head - Can be worn on neck when not on head	- Can provide some discomfort when wet or constant rubbing	- New materials for that are soft to touch and water resistant	- Material weight & soft hand

REI Co-op Sahara Outback Cape Hat



Figure 75: REI Co-op Sahara Outback Cape Hat
 (https://www.rei.com/product/126630/rei-co-op-sahara-outback-cape-hat?cm_mmc=c_jf_AL_-157226_-196286_-NA&avad=196286_c24tj936d,n.a)

	Strength	Weaknesses	Opportunities	Threats
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Full Brim	<ul style="list-style-type: none"> - Full head protection from sun 	<ul style="list-style-type: none"> - No further benefit 	<ul style="list-style-type: none"> - Create new brim silhouette that still provides 360 sun protection 	<ul style="list-style-type: none"> - Basic silhouette
Storable Neck Cape	<ul style="list-style-type: none"> - Neck and ear protection from sun - Packable into hat 	<ul style="list-style-type: none"> - Basic pattern - No Further benefits 	<ul style="list-style-type: none"> - Unique pattern focusing on breathability 	<ul style="list-style-type: none"> - Basic silhouette
Mesh Panels	<p>Allows breathability on side of head</p>	<ul style="list-style-type: none"> - Mesh is not very durable - Can let head escape from head if in cold weather 	<ul style="list-style-type: none"> - New materials for quick drying and easy cleaning - Closing system when weather gets cold 	<ul style="list-style-type: none"> - Basic silhouette
Headband	<ul style="list-style-type: none"> - Wicks sweat from around head 	<ul style="list-style-type: none"> - No Further Benefits 	<ul style="list-style-type: none"> - New materials for quick drying and easy cleaning 	<ul style="list-style-type: none"> - Basic silhouette
Foam in Brim	<ul style="list-style-type: none"> - Gives form to brim 	<ul style="list-style-type: none"> - Harder to pack and deforms is packed poorly 	<ul style="list-style-type: none"> - Thinner material that still provides form stability 	<ul style="list-style-type: none"> - Basic silhouette
Adjustable Chin strap	<ul style="list-style-type: none"> - Secures hat to head - Can be worn on neck when not on head 	<ul style="list-style-type: none"> - Can provide some discomfort when wet or constant rubbing 	<ul style="list-style-type: none"> - New materials for that are soft to touch and water resistant 	<ul style="list-style-type: none"> - Material weight & soft hand

REI Co-op Screeline

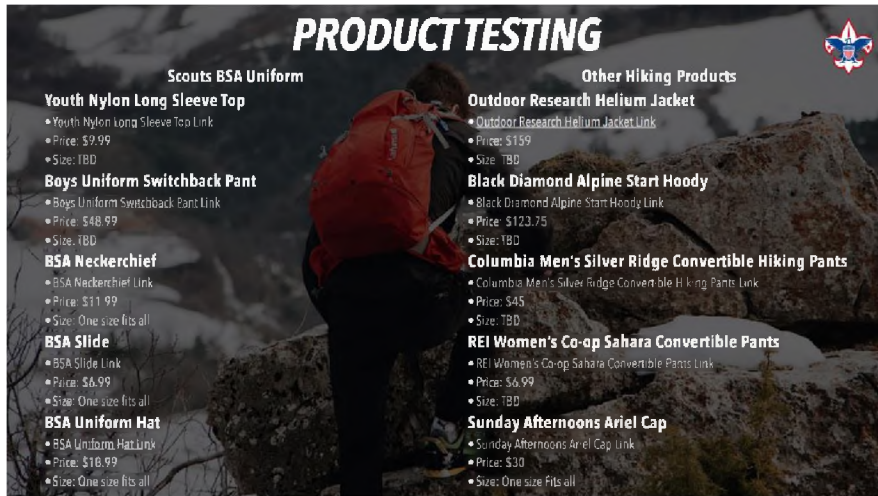


Figure 76: REI Co-op Screeline Cap (<https://www.rei.com/product/168186/rei-co-op-screeline-cap>, n.a)

	Strength	Weaknesses	Opportunities	Threats
Visor	<ul style="list-style-type: none"> - Sun protection from front of face 	<ul style="list-style-type: none"> - Does not protect neck or ears 	<ul style="list-style-type: none"> - Adding neck cape for 360 protections - Graphic branding 	<ul style="list-style-type: none"> - Basic silhouette
Mesh Crown Ventilation	<ul style="list-style-type: none"> - Sun protection on top of head - Allows breathability on side of head 	<ul style="list-style-type: none"> - Basic pattern, - Let's heat escape from head if weather is cold 	<ul style="list-style-type: none"> - New materials for quick drying and easy cleaning - Closing system when weather gets cold 	<ul style="list-style-type: none"> - Basic silhouette
Stretch Sweatband	<ul style="list-style-type: none"> - Wicks sweat from around head - Stretch comfort for adjustable sizing 	<ul style="list-style-type: none"> - No further benefits 	<ul style="list-style-type: none"> - New materials quick drying and soft to touch 	<ul style="list-style-type: none"> - Basic silhouette
Foldable Foat-able Brim	<ul style="list-style-type: none"> - Allows for easy packing - Foats on water 	<ul style="list-style-type: none"> - Can't have a bent brim style 	<ul style="list-style-type: none"> - Different brim that doesn't crease and is very flexible 	<ul style="list-style-type: none"> - Basic silhouette

PERFORMANCE TESTING PLANS

The following below is the testing plans on competitor products and prototypes to ensure final product success. (Lau, Performance Testing Plans, 2021)



PRODUCT TESTING

Scouts BSA Uniform

- Youth Nylon Long Sleeve Top**
 - Youth Nylon Long Sleeve Top Link
 - Price: \$9.99
 - Size: TBD
- Boys Uniform Switchback Pant**
 - Boys Uniform Switchback Pant Link
 - Price: \$48.99
 - Size: TBD
- BSA Neckerchief**
 - BSA Neckerchief Link
 - Price: \$11.99
 - Size: One size fits all
- BSA Slide**
 - BSA Slide Link
 - Price: \$6.99
 - Size: One size fits all
- BSA Uniform Hat**
 - BSA Uniform Hat Link
 - Price: \$18.99
 - Size: One size fits all

Other Hiking Products

- Outdoor Research Helium Jacket**
 - Outdoor Research Helium Jacket Link
 - Price: \$159
 - Size: TBD
- Black Diamond Alpine Start Hoody**
 - Black Diamond Alpine Start Hoody Link
 - Price: \$123.75
 - Size: TBD
- Columbia Men's Silver Ridge Convertible Hiking Pants**
 - Columbia Men's Silver Ridge Convertible Hiking Pants Link
 - Price: \$45
 - Size: TBD
- REI Women's Co-op Sahara Convertible Pants**
 - REI Women's Co-op Sahara Convertible Pants Link
 - Price: \$6.99
 - Size: TBD
- Sunday Afternoons Ariel Cap**
 - Sunday Afternoons Ariel Cap Link
 - Price: \$30
 - Size: One size fits all



PERFORMANCE METRICS

Fit, Thermoregulation & Flexibility

COLLECTION OF DATA

Athlete: Adolescent Male & Female

Product Wear Testing

- **Hiking Exersion:** Real world testing of competitor and prototypes
- **Treadmill Exercise:** Controlled testing of walking gait and flexibility (with and without hiking gear)
- **Steep Stool Exercise:** Controlled testing of garment and user flexibility (with and without hiking gear)

Photo/Video Documentation

- Efficient and accurate way of evaluating fit and great way of capturing user in motion (with and without hiking gear)



HOW DATA WILL BE ANALYZE

- Gait Analysis**
- Garment Weight on Body**
- Athlete Interview**
- Sweat Mapping**
- Analyzing Posed Photos for Fit Issues**
- Video and Photo Documentation**

TESTING PLAN: HIKING EXCURSION



Athlete: Adolescent Male & Female

Where: Hiking trail

Summary: Real world testing of full prototypes and competitor product. Flexibility, fit/comfort, and thermoregulation will be documented

Process:

- Fill out paper work and consent form (digital or paper)
- Initial impression of product through printed survey
- Starting and completing hike documented through photography and video to capture user in motion along with fit flexibility and hot spots on body
- Final Impression of product through interview and or survey

TESTING PLAN: TREADMILL EXERCISE



Athlete: Adolescent Male & Female

Where: UO SPD Nucleus Lab Treadmill

Summary: Controlled testing of full prototypes and competitor product. Walking gait along with flexibility, fit/comfort, and thermoregulation will be documented

Process:

- Fill out paper work and consent form (digital or paper)
- Initial impression of product through printed survey
- Weight user weight of each individual garment
- Timed walk at different treadmill speeds
- May also attach foam pads to vary step height to evaluate gait changes
- Tested with and without gear
- Task is documented through video and photography
- Final Impression of product through interview and or survey

TESTING PLAN: STEP STOOL EXERCISE



Athlete: Adolescent Male & Female

Where: UO SPD Nucleus Lab with step stools

Summary: Controlled testing of full prototypes and competitor product. Walking gait, flexibility and comfort will be documented

Process:

- Fill out paper work and consent form (digital or paper)
- Initial impression of product through printed survey
- Weight user weight of each individual garment
- User will step on and over different stool/obstacles at different heights and variations
- Tested with and without gear
- Task is documented through video and photography
- Final Impression of product through interview and or survey

TESTING PLAN: STATIONARY PHOTO DOCUMENTATION



Athlete: Adolescent Male & Female

Where: UO SPD green room

Summary: Documentation of fit and flexibility of garments

Process:

- Fill out paper work and consent form (digital or paper)
- Initial impression of product through printed survey
- User will pose in a variety of stationary positions mimicking movements during hiking and general activity
- Tested with and without gear
- Task is documented through photography
- Final Impression of product through interview and/or survey

Figure 77: Performance Testing Plans, 2021

PERFORMANCE TESTING

USER INSIGHT



Important Apparel Functions

- Thermoregulation
- Packability
- Fit
- Flexibility



User Design Input

- Modernized Uniform
- Flexible around the arm and shoulders
- Light weight breathable materials
- Higher quality snaps
- Multi purpose
- Slimming the fit of the top and bottoms
- Easy to live in



Popular Apparel Brands

- REI
- Columbia



Apparel Missing from Scout Catalog

- Breathable Outerwear Shell
- Hooded Jacket

BASELINE COMPETITOR: UNIFORM

Men Polyester Wool Long Sleeve	Men Polyester Microfiber Switchback Pant	Female Polyester Microfiber Long Sleeve	Female Canvas Switchback Pant	Stretch Fit Adult Cap
				
Price: \$54.99	Price: \$54.99	Price: \$37.99	Price: \$39.99	Price: \$18.99
65% Polyester, 25% Rayon, 10% Wool	100% Polyester	100% Polyester	65% Cotton, 33% Polyester	95% Polyester, 5% Spandex
Wrinkle Resistant	Antimicrobial finish	Antimicrobial finish	Wrinkle Resistant	Stretch fit tech
Moisture wicking	Moisture wicking	Moisture wicking	Moisture wicking	3D embroidery
Cool to the touch	Convertible to shorts	Breathable back yolk	Convertible to shorts	UPF Protection: 40+
UPF Protection: 40+	Gusseted Inseam	Swiss tab for short sleeve	UPF Protection: 40+	
	UPF Protection: 40+	UPF Protection: 40+		

BASELINE COMPETITOR: HIKING

Men Columbia Silver Ridge 2.0 Plaid Long-Sleeve



Price: \$55.00

100% Polyester

Omni-wick for moisture wicking and quick drying

UPF rating: 40

Antimicrobial treatment for odor prevention

Back vents for ventilation

Rollup sleeve tab for modularity

Men Columbia Silver Ridge Convertible Pant



Price: \$60.00

Omni-Shade Main Body (100% Nylon)

Omni-Wick Mesh Panels (57% recycled Polyester, 43% Polyester mesh)

50 UPF Sun Protection

Moisture wicking

Convertible pants to shorts

Multiple utility pockets

Female REI Co-op Sahara Button-Up Long-Sleeve



Price: \$59.95

95% Nylon, 5% Spandex

Convertible sleeves button

UPF rating: 35

Snap chest pockets for security

Underarm panels treated with LAVA XL for quick drying and odor resistance

Female REI Scudgy Convertible Pant



Price: \$65

96% Nylon, 4% elastane

Omni-Shield for repelling water & stains

Omni-Shade UPF sun protection

Zippered security pocket

Convertible pants to shorts

Articulated knee and gusset

Mid rise

REI Co-op Screenshot Cap



Price: \$26.95

100% Nylon
100% Polyester lining

Quick drying

Foldable brim for packability

UPF Protection: 30+

Columbia FKT II Windbreaker Jacket



Price: \$120

100% Nylon

Omni-shield for water/wind repellency

Elastic cuffs

Light weight

packable pocket

PRODUCT ANALYSIS: TOPS

Men Polyester Wool & Female Polyester Microfiber Shirt



Body and sleeve has a loose fit for mobility could look baggy and add extra weight

Opportunity to add zones for flexibility and breathability rather than relying on the loose fit

Material wicks moisture from the skin but does not have much stretch

Silhouette is very basic and does not provide additional performance benefits

Men Columbia Silver Ridge 2.0 Plaid Long Sleeve & Female REI Co-op Sahara Button-Up Long-Sleeve



Body has some back vents for breathability but the silhouette is very basic

Silhouette is very basic and does not provide additional performance benefits

Opportunity to add zones for flexibility and breathability for the armpits

Material wicks moisture from the skin but does not have much stretch

Method of rolling up sleeve to the button clasp can affect arm mobility

Columbia FKT II Windbreaker Jacket



Material on the body and sleeves is weather proof but is not very breathable

Silhouette is very basic and does not provide additional performance benefits

Opportunity to add zones for flexibility and breathability

Rather than having a collar, a hood can replace it to provide better protection from the weather

PRODUCT ANALYSIS: BOTTOMS & HATS

Men Polyester Microfiber Switchback Pant



Body has a loose fit for mobility could look baggy and add extra weight

Opportunity to add zones for flexibility and breathability rather than relying on the loose fit

Material wicks moisture from the skin but does not have much stretch

Zipper leg allows for modularity but may cause discomfort in certain

Female Canvas Switchback Pant



Body has a loose fit for mobility could look baggy and add extra weight

Opportunity to add zones for flexibility and breathability rather than relying on the loose fit

Canvas does not wick or stretch; any flexibility is relied on the loose fit

Silhouette is very basic and does not provide additional performance benefits

Men Columbia Silver Ridge Convertible Pant



Body has a loose straight leg fit for mobility

Opportunity to add zones for flexibility and breathability
Elastane and polyester mix allows for wicking and some flexibility

Zipper leg allows for modularity but may cause discomfort

Female REI Scudgy Convertible Pant



Body has a loose straight leg fit for mobility

Opportunity to add zones for flexibility and breathability
Elastane and polyester mix allows for wicking and some flexibility

Zipper leg allows for modularity but may cause discomfort

Mid rise fit may not fit certain body types

Stretch Fit Adult Cap



Stretch fit tech allows for a secure fit but is not adjustable

Hat material is not breathable nor wicking
Silhouette is basic and does not provide additional benefits

REI Co-op Screenshot Cap



Opportunity to add a neck cape to provide 360 head and neck protection

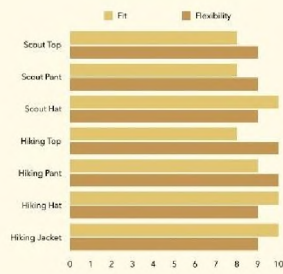
Rather than having paneling for a bendable brim, are there plastic brims that don't crease when bent and packed

FIT & FLEXIBILITY TESTING

Testing Method

- Adult Male & Female Tester**
- Survey measuring user perception of garments fit and flexibility**
- Posea photography that is analyzed to identify fit and flexibility issues on the garments**

Male Survey Results



Female Survey Results



FIT & FLEXIBILITY PHOTO ANALYSIS

Male Analysis



Female Analysis

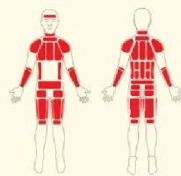


THERMOREGULATION TESTING

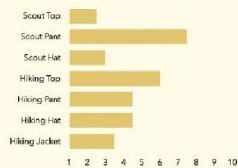
Testing Method & Goals

- Male (Domenic) & Female (Dorothy) Treadmill Testers**
- Garments weight before and after in ounces**
- 30 min walk with Hiking Bag weighing 30% of Body Weight w/ each outfit**
- 45 min walk without bag w/ each outfit**
- 15 min check ins** accessing user & garment performance
- Environment:** UC SPD Nucleus Lab
- Humidity:** 36.7% RH
- Temperature:** 74.99 degrees Fahrenheit
- Treadmill Setting:** 2.5 mph at 10% incline to simulate a steep trail
- Survey** accessing users perception of garments **Thermoregulation Performance, Chafing, Hot Spots & Flexibility**

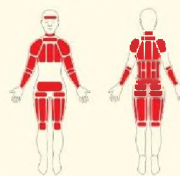
Male Hot Spots



Average Male Rating



Female Hot Spots



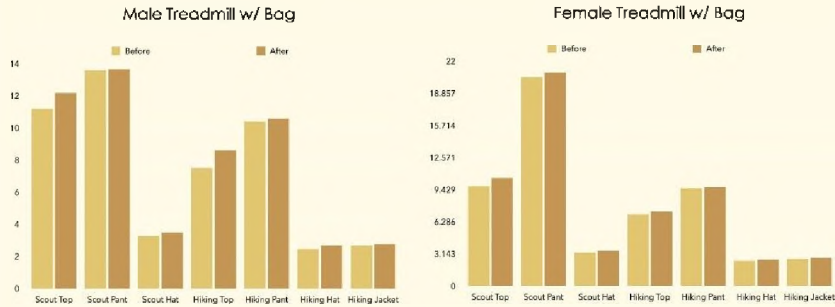
Average Female Rating



AN INTERESTING OBSERVATION

Changes in weight of the garments during the thermoregulation testing were not significant despite the heat discomfort from the testers.

This result is due to the baggy fit of the garments, preventing the fabric from wicking sweat from the skin, allowing the sweat to just stay on the skin



PERFORMANCE METRICS



Fit: 50%

Breathability: +25%

Reduce Weight: +25%

NEW TECHNOLOGIES

FLOW

Breathability

Improved moisture wicking & air flow to the skin to the body's hotspots

FORM

Fit & Flexibility

Sleek fit through conscious garment construction & flexibility zoning

FEATHER

Weight

Embodying comfort and performance through light weight materials

IDEATION & PROTOTYPING PLAN


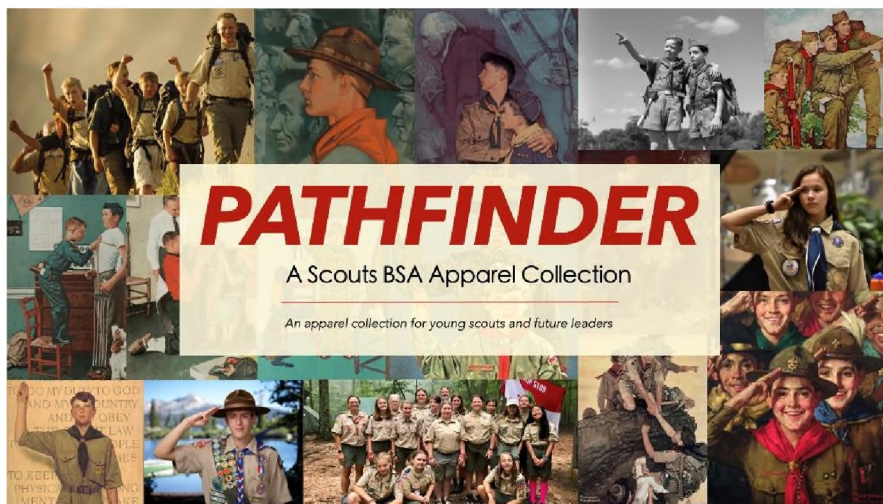
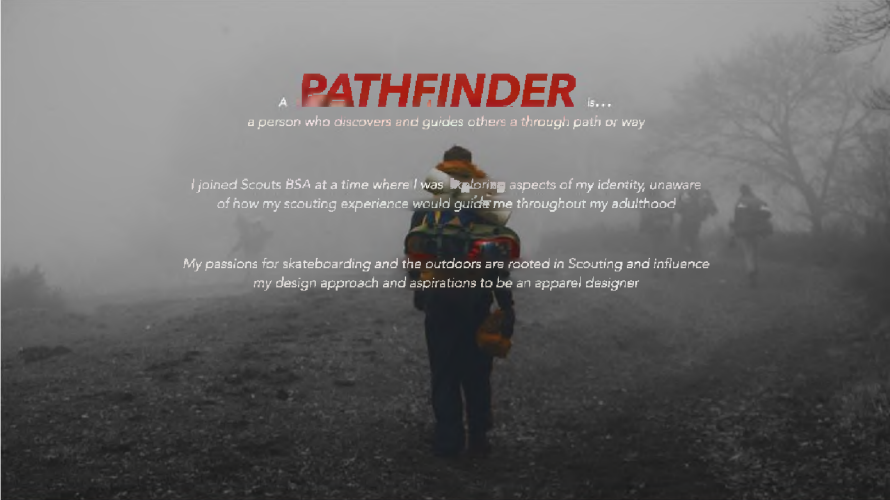
Week 5	Week 6	Week 7	Week 8	Week 9
Completing Midterm Order sample swatches Begin ideation sketching Explore outdoor retailers for inspiration Begin hat prototyping parts below Sweat band Crown pattern/Eyelets Brim shape Adjustable Closure	Continue ideation sketching Finish prototyping hat and begin working on shirt parts below Body/shirt closure Sleeves Collar Pocket placements/epaulets	Finish shirt parts & begin Prototyping on uniform male pant parts below. Pocket placement Zip off leg Sections of flexibility/breathability Body	Educating myself on designing female pants & prototype female uniform pant parts below. Pocket placement Zip off leg Sections of flexibility/breathability Body	Prototyping on uniform hiking jacket below: Body/closure Sleeves Collar/stuffable hood Pocket placements 

Figure 78: Performance Testing, 2021

END OF WINTER TERM PRESENTATION: NEW TECHNOLOGIES TESTING



PATHFINDER
A Scouts BSA Apparel Collection
An apparel collection for young scouts and future leaders



A **PATHFINDER** is...

a person who discovers and guides others a through path or way

I joined Scouts BSA at a time where I was exploring aspects of my identity, unaware of how my scouting experience would guide me throughout my adulthood

My passions for skateboarding and the outdoors are rooted in Scouting and influence my design approach and aspirations to be an apparel designer



PROBLEM STATEMENT

How can we reimagine a Scout BSA uniform that focuses on the needs of the adolescent outdoor enthusiast through improved thermoregulation, fit and flexibility



THE SCOUT UNIFORM

A Story of the Scout's Journey

Not one uniform is the same. It acts as a canvas that is painted on by troop patches and awards earned. It has a **deep history** and gives the **wearer a sense of pride** whether if they are following the steps of family before them or being the first of their generation to join Scouting.

PROJECT IMPORTANCE

It's Iconic

It is one of the most recognizable garments in the world

The Young Outdoor Enthusiast

2.2 million Scouts, 140,000 of them girls who have a passion for the outdoors

Adolescents in the Sports Industry

Adolescent sports products are neglected resulting in shrunken down adult silhouettes

The Uniform is Outdated

The uniform does not meet performance needs of the current young athletes. Scouts desire a modernized & high performing scout branded apparel



PRODUCT COLLECTION

Collection will Feature Male and Female Uniform



5 Panel Hat



Long Sleeve Button Down Shirt



Hiking Convertible Pant



Light Weight Hiking Shell



MOOD & COLOR



Sacramento

Oatmeal

Black

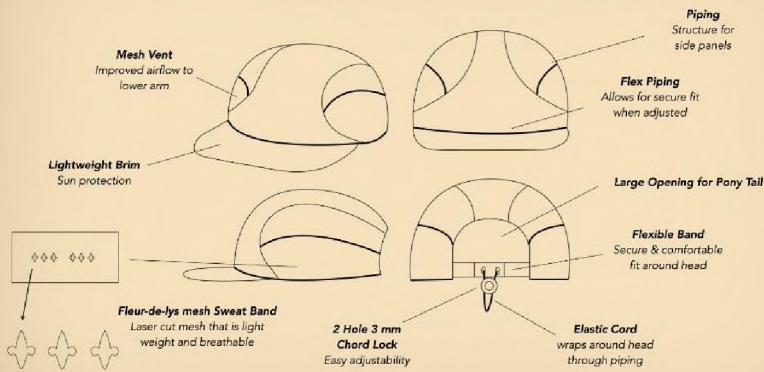
Cappuccino

reflective

IDEATION: FLEX RAPID ADAPTABILITY



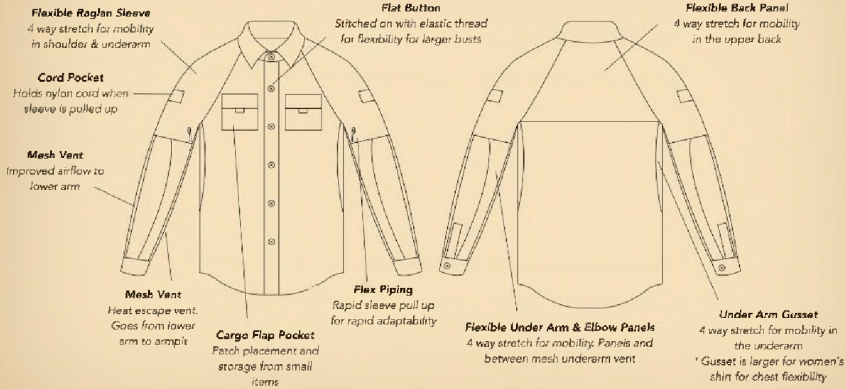
TECH FLATS: UNIFORM HAT



HAT PROTOTYPE



TECH FLATS: UNIFORM SHIRT



LONG SLEEVE PROTOTYPE



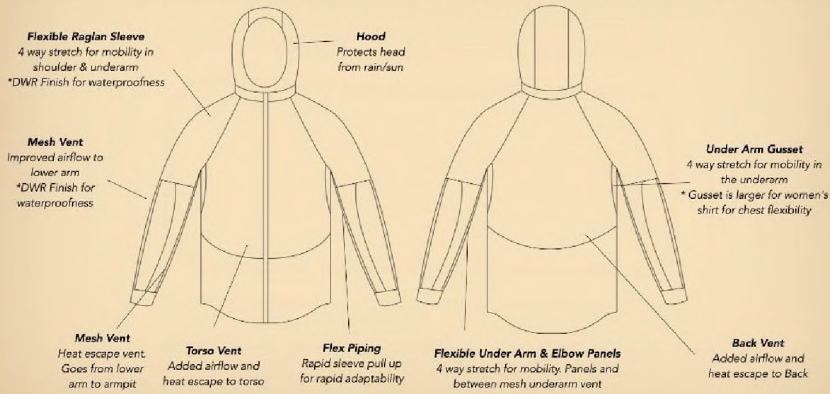
TECH FLATS: UNIFORM/HIKING PANT



HIKING PANT PROTOTYPE



TECH FLATS: LIGHT WEIGHT HIKING SHELL



LIGHT WEIGHT JACKET PROTOTYPE





NEW TECHNOLOGIES

FLOW
Breathability + 25%
Improved air flow to the skin's hotspots

FLEX
Flexibility + 25%
Conscious garment construction, rapid adaptability & flex zoning

FEATHER
Weight - 25%
Embodying comfort & performance through light weight materials

FLOW TESTING

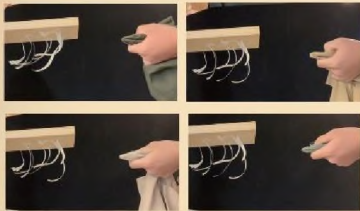
Testing Method

Following fabric swatches were cut and attached to a air compressor and blown at paper streamers.

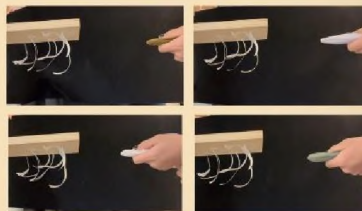
Goal

New fabric shows more visible movement with streamers than base fabrics

Competitor Fabrics Results



Prototype Fabric Results



Prototypes Results

New fabrics show more visible movement in the streamers, demonstrating showing more breathability than the base fabrics

← FLEX TESTING →

Testing Method

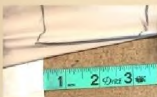
3 in square is on each fabric swatch and are stretched along a ruler

Goal

New fabrics must stretch 25% more than the base fabrics

Competitor Fabrics Results

Polyester Microfiber L/S Uniform Top
No Stretch



Polyester Wool Uniform L/S Top
+8% Stretch



Prototype Fabric Results

Polyester 90%, Spandex 10%
Microfiber Stretch Woven
+25% Stretch



Polyester 94%, Lycra 6%
4 way Stretch Woven
+25% Stretch



Polyester Microfiber Switchback Pant
No Stretch



Canvas Switchback Pant
No Stretch



97 Polyester, 3% Spandex
Twill+33% Stretch



Polyester Micro Fiber Birdseye
Flat Back Mesh
2X Stretch



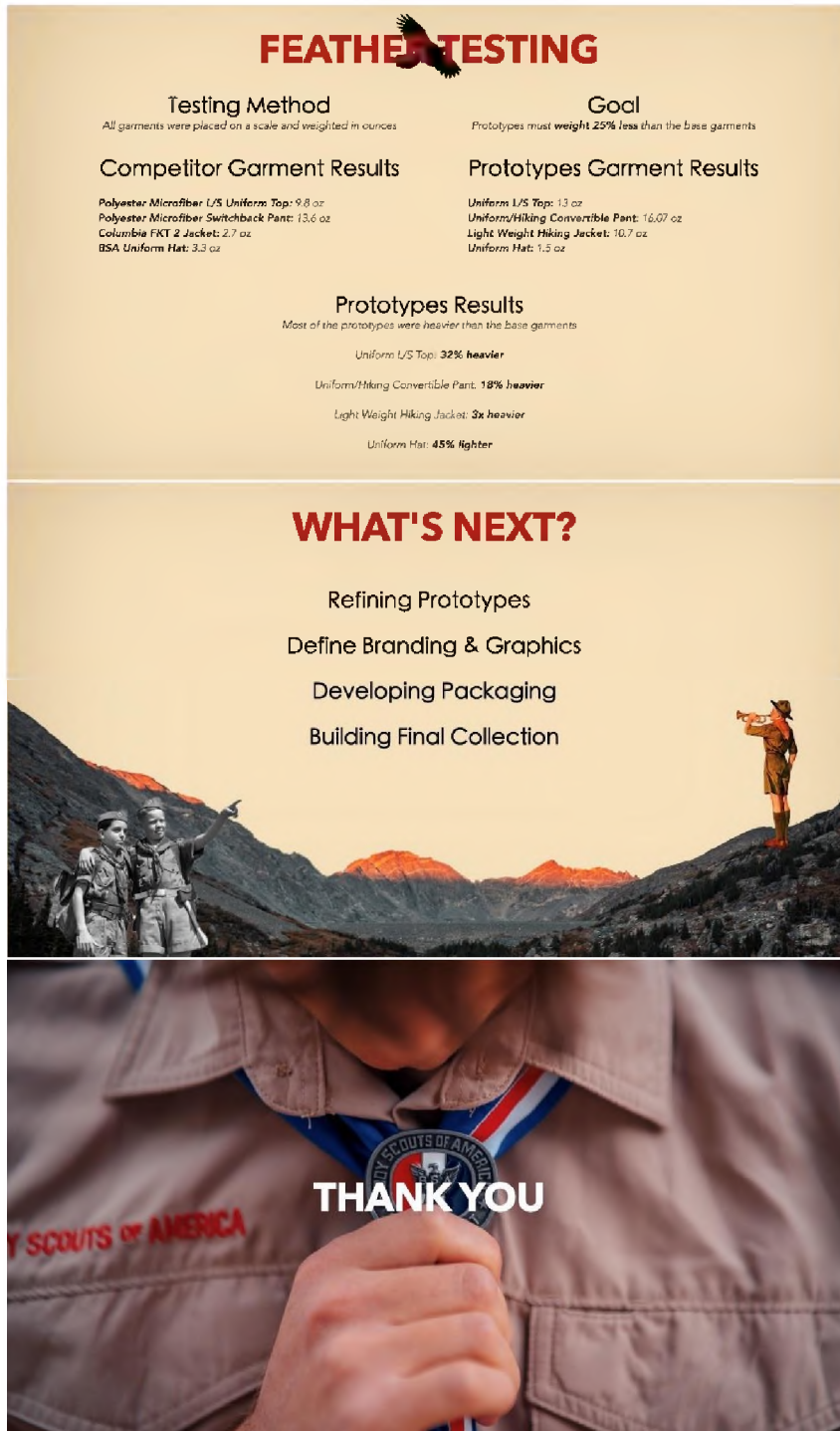


Figure 79: End of Winter Term Presentation: New Technologies Testing

FINAL PRESENTATION (END OF SPRING TERM)

Since Winter term final, I made a couple of changes to the collection. The one change was creating a unisex collection rather than a separate men's and women's due to the varying

changes that can happen in both male and female adolescents. The collection focuses on having these garment accommodate for these changes by using fabrics that have 4-way stretch and paneling in spots where the body loses flexibility. The last change was rather than making a lightweight hiking shell, I pivoted and chose to make an hiking shell in order to allow the garment to have more features such as pockets, zippers to open and close ventilation, and more opportunity to push the aesthetic of the jacket. (Lau, PathFinder Final Presentation, 2022)

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Slide 46-49: Features & Benefits
Slide 50-55: In Context Photography
Slide 56: Scout Validation
Slide 57: How Collection Benefits Scouts





PATHFINDER

A person who discovers, explores and leads others

I joined Scouts BSA at a time where I was exploring aspects of my identity, unaware of how my scouting experience would lead me throughout my adulthood

My passions for the outdoors have roots in Scouting and influence my approach to design apparel that allows the wearer to not only perform their best but to enjoy the activity they participate in



THE SCOUT UNIFORM

The Story of the Scout's Journey

It represents the Scout's individual achievements along with comradery within their troop. It also embodies Scouting's history and values in service, leadership and their roots in the outdoors



SCOUT UNIFORM ORIGINS

Designed by Robert Baden Powell in 1908. He was inspired by military uniforms as a garment that not only looked presentable but was also comfortable and functional in varying weather conditions. The uniform displayed the scouts not only as highly skilled outdoorsmen but also leaders that were dependable and trusted to do their best.



CURRENT UNIFORM

Last updated by fashion designer Oscar De La Renta in 1978

Features

- Wicking/breathable materials
- Loose fit for mobility
- Quick drying
- Antimicrobial!

SCOUT INPUT

Michael Potter & Portland Troop 110

"Does not meet performance needs of the modern scout"



Arm & Shoulder
Flexibility



Modernized
Silhouette



Multi-Purpose



Breathable Panels



Easy to live in



SOLUTION STATEMENT

How can we reimagine a Scout BSA uniform that focuses on the needs of the adolescent outdoor enthusiast through improved thermoregulation, fit and flexibility





MATURATION & THE ADOLESCENT ATHLETE



SCARCE RESEARCH

Accurate studies on evaluating young athletes' performance are heavily influenced on their stage of physical development of maturity

Changes are predictable, but vary person to person and have positive and negative effects on the athlete's performance

THERMOREGULATION



Heat Injuries Rank Second to Head Injuries

Teens generally have shorter exercise tolerance, higher sensitivity, and longer acclimation to temperature change putting them at higher risk for heat related injuries



Rely on Dry Heat Exchange to Regulate Body Heat

Adults mainly rely evaporative heat loss through sweat while adolescents depend on dry heat exchange mainly through convection due to lower sweat rate

FLEXIBILITY & FIT



Loss of Flexibility

During mid-adolescence, skeletal growth typically occurs before muscle growth resulting in loss of flexibility in joints. (Female's have greater musculoskeletal and physical flexibility than males. However, this does not apply to everyone as many physical and environmental factors influence flexibility)



Growth Spurts

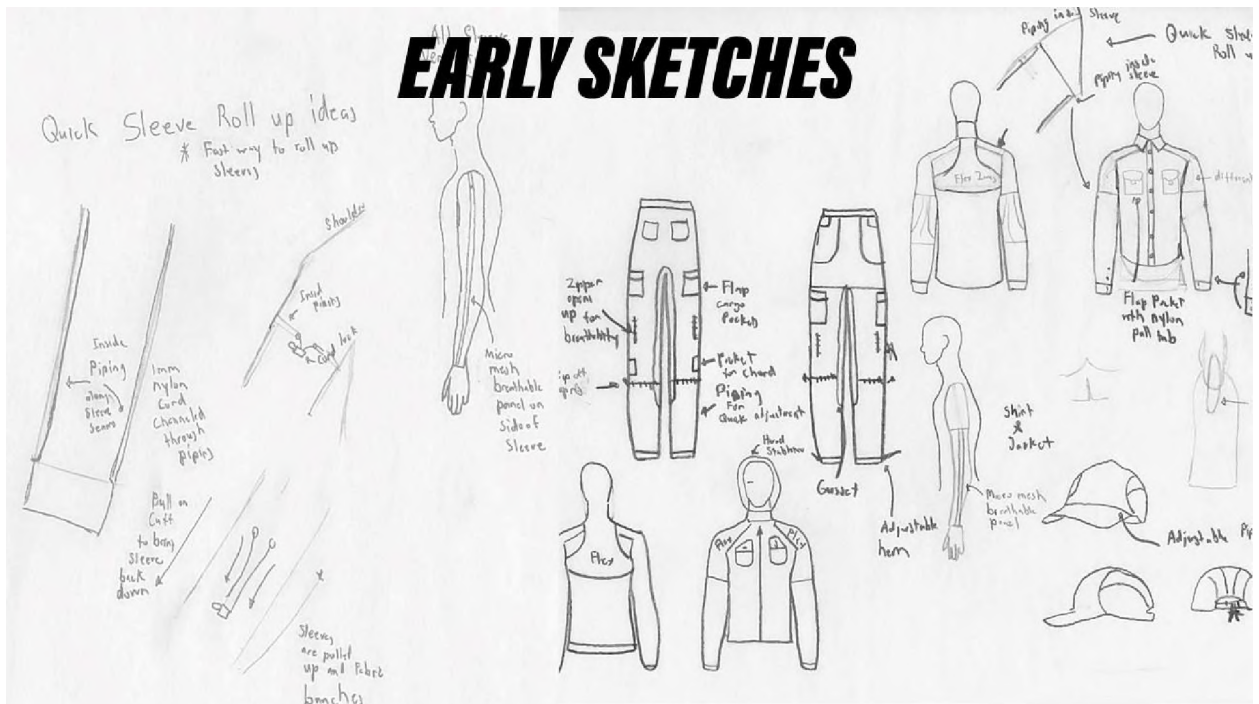
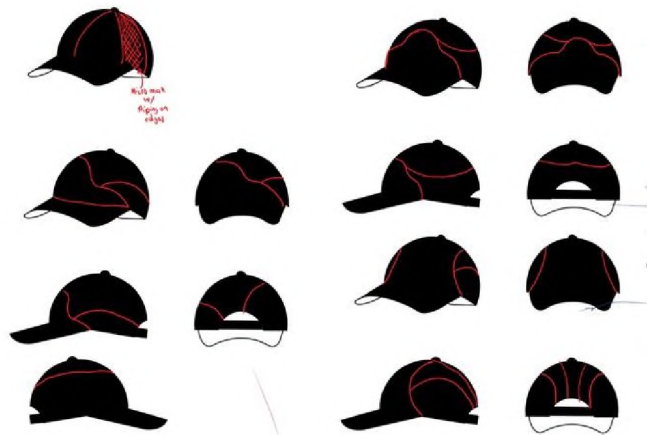
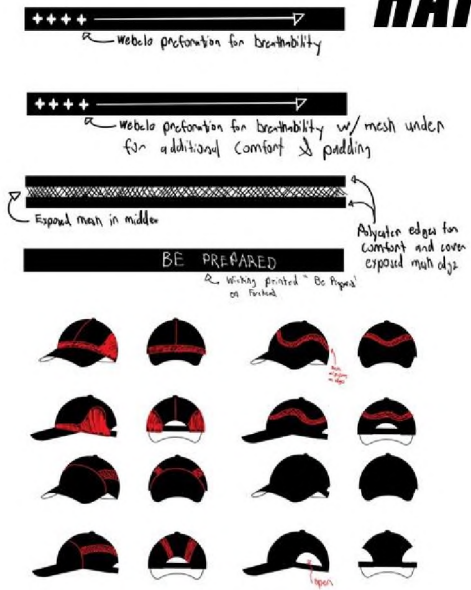
Velocity of 8 to 10 cm per year. Hormones and strength also grow, affecting overall performance



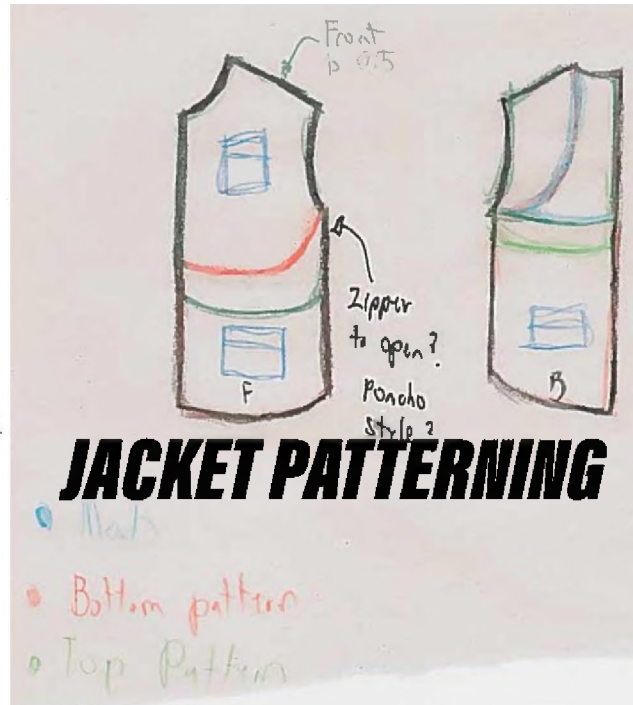
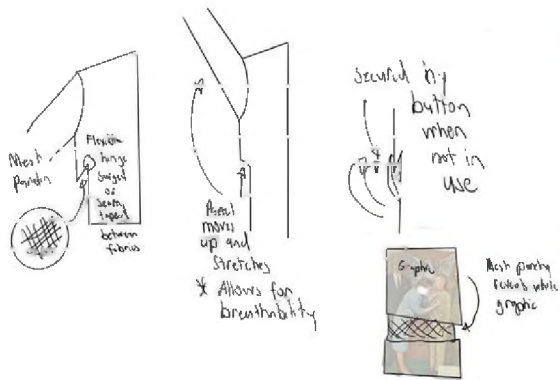
MOODBOARD



HAT IDEATION

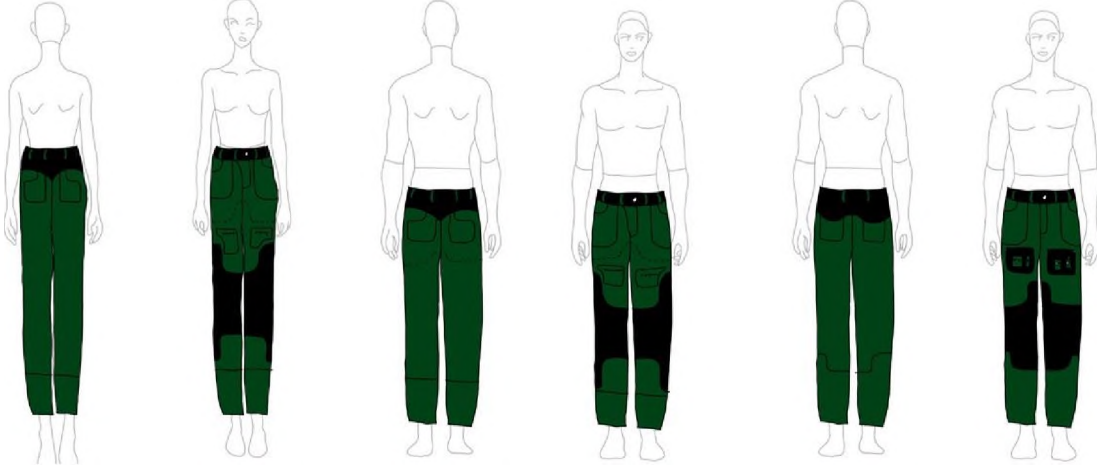


360 VENTILATION

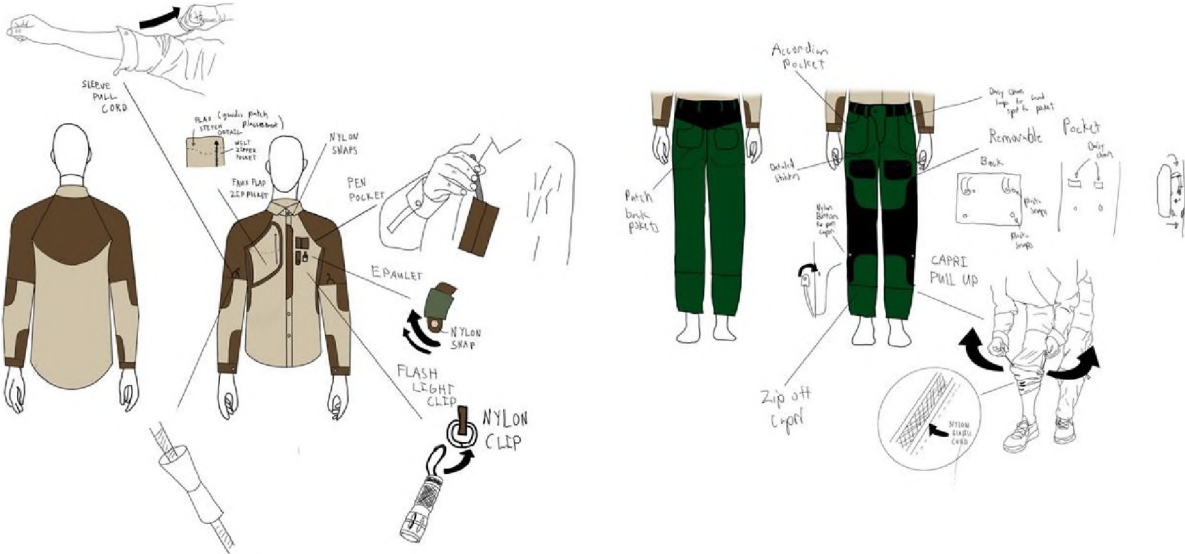


LS SHIRT SKETCHES

PANT SKETCHES

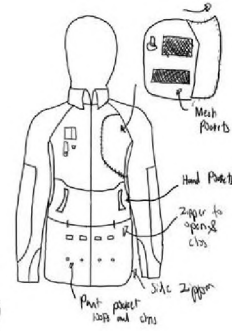


SHIRT & PANT FEATURES





JACKET SKETCHES



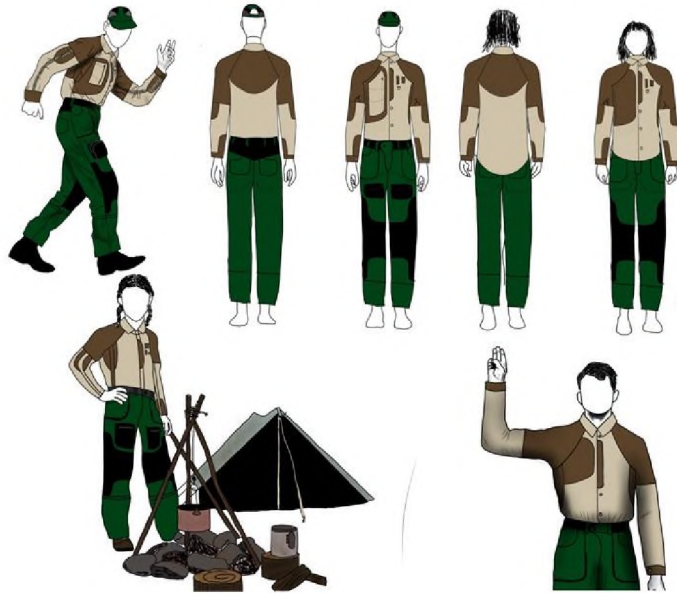
JACKET SKETCHES



FINAL JACKET



FINAL SHIRT & PANT









PATHFINDER COLLECTION

***5 PANEL
UNIFORM HAT***



***LONG SLEEVE
UNIFORM SHIRT***



***CONVERTIBLE
HIKING PANT***



***HIKING
OUTERWEAR SHELL***



TECHNOLOGIES



FLOW

Airflow to the body's hotspots



FLEX

Increased articulation in joints that lose flexibility during maturation



RAPID

Quick adaptability in situational environments



FLOW

Mesh Ventilation

Mesh paneling along the top and bottom of the arm and side of torso

360 Degree Breathability

Improved air-flow and heat escape around the body

FLOW
VALIDATION

Mesh Ventilation
Vs
Scout Shirt
Result:
Mesh paneling shows 100%
breathability than Base Garment

Mesh Prototype *Base Garment*

FLEX

Stretch Fabric
4-Way Stretch Woven Twill
Polyester/Elastane

Flexibility Zoning
Conscious garment construction w/
stretch fabric. Ex: Raglan Sleeve



FLEX VALIDATION

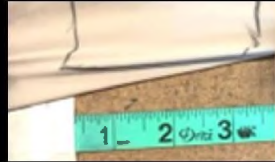
Stretch Fabric Vs Base Garment

Testing Method:

3 in square is on each fabric swatch and are stretched along a ruler

*Polyester Microfiber L/S
Uniform Top*

No Stretch



4 -Way Stretch Woven Twill

+25% Stretch



*Polyester Microfiber Uniform
Switchback Pant*

No Stretch



RAPID

Quick Pull Adjustability

Elastic chord is pipped into panel and when pulled, fabric is pulled up for quick adaptability to environmental circumstances





HAT TECH FLAT

BRAND: Pathfinder Scouts BSA

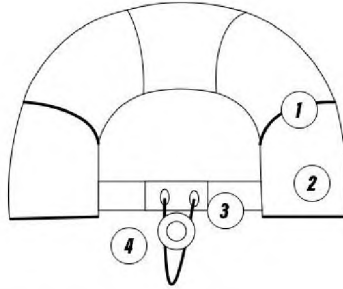
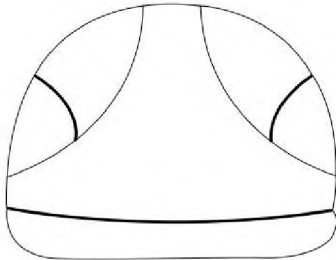
DESIGNER: Bryan Lau

SEASON: S/S 2023

SEASON: S/S 2023

STYLE NAME: Uniform Hat

DESCRIPTION: Unisex



1. Reflective Piping
2. Mesh Side Panels
3. 2mm Adjustable Draw Cord
4. 2-Hole cord lock
5. Mesh Fleur De Les Sweat Band

- 2mm Reflective Piping
- Bird's Eye Mesh | 100% Polyester
- 2mm Adjustable Draw Cord
- 2-Hole cord lock
- Bird's Eye Mesh 80% Polyester 20% Spandex
- 100% Nylon Taslan



SHIRT TECH FLAT

BRAND: Pathfinder Scouts BSA

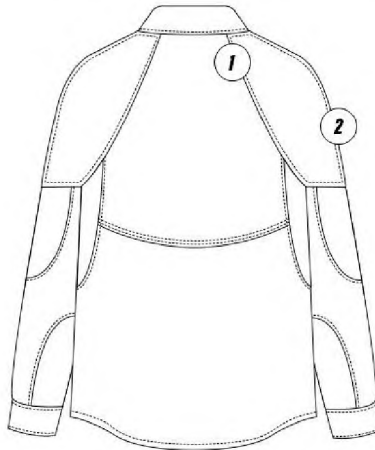
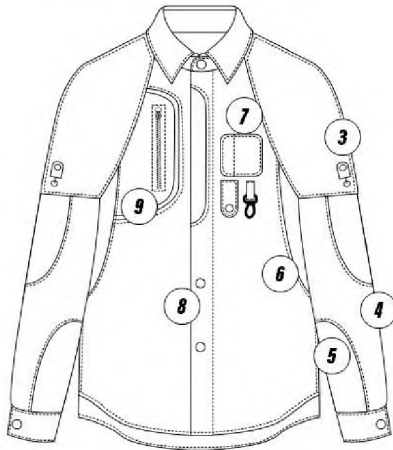
DESIGNER: Bryan Lau

SEASON: S/S 2023

SEASON: S/S 2023

STYLE NAME: Long Sleeve Uniform Shirt

DESCRIPTION: Unisex



1. Reflective Piping
2. Raglan Flexible Sleeve
3. Rapid Quick Pull Sleeve
4. Top Arm Vent
5. Bottom Arm Vent
6. Back & Front Under Arm Gusset
7. Pen Pocket, Epaulet & Snap Hook
8. Zip Chest Pocket

- 2mm Reflective Piping
- Bird's Eye Mesh | 90% Polyester, 10% Spandex
- 3mm Nylon Chord
- 2 hole cord lock
- 4 Way Stretch Woven Twill | 90% Polyester, 10% Spandex
- Duraflex 2.5mm Chord Lock x2
- Plastic Snap Hook
- Plastic snaps | 12mm



PANT TECH FLAT

BRAND: Pathfinder Scouts BSA

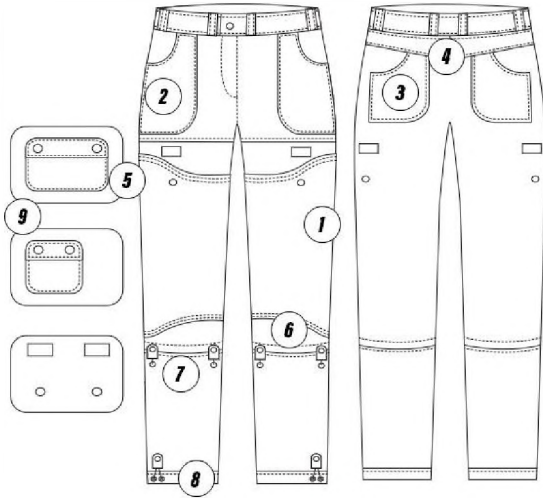
DESIGNER: Bryan Lau

SEASON: S/S 2023

SEASON: S/S 2023

STYLE NAME: Convertible Uniform Pant

DESCRIPTION: Unisex



1. Reflective Piping
 2. Accordion Front Pocket
 3. Back Hand Pocket
 4. Yoke
 5. Attachable Cargo Pocket System
 6. Rapid Capri Pull
 7. Zip Off Capri
 8. Adjustable Hem
 9. Cargo Flap Pockets
- 2mm Reflective Piping
 - 3mm Nylon Chord
 - 2 hole cord lock x2
 - 4 Way Stretch Woven Twill | 90% Polyester, 10% Spandex
 - Durallex 2.5mm Chord Lock x4
 - Plastic Snap Hook
 - Plastic snaps | 12mm
 - 1.5in Nylon Webbing
 - 7 in Closed Ended Zipper
 - 9 In Separating Zipper



JACKET TECH FLAT

BRAND: Pathfinder Scouts BSA

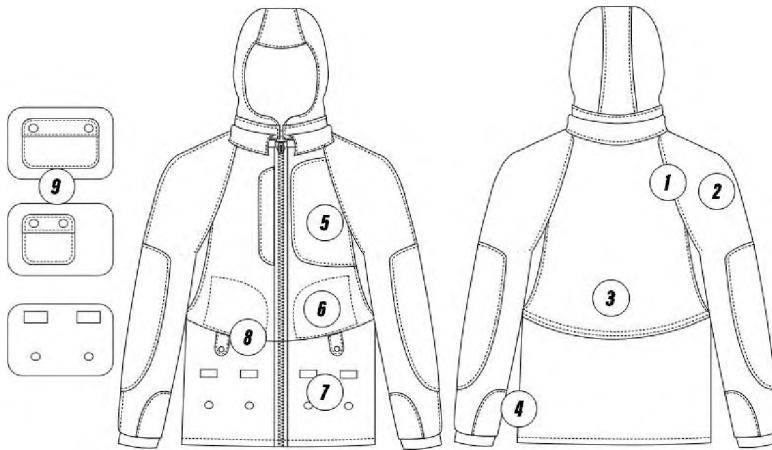
DESIGNER: Bryan Lau

SEASON: S/S 2023

SEASON: S/S 2023

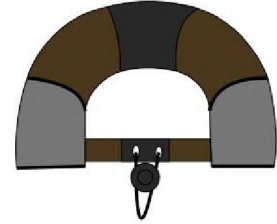
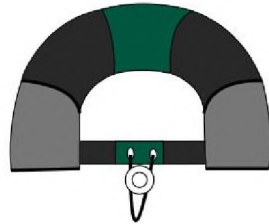
STYLE NAME: Hiking Shell Jacket

DESCRIPTION: Unisex



1. Reflective Piping
 2. Flex Raglan Sleeve
 3. Back Zipper Vent
 4. Side Zippered Vent
 5. Zippered Chest Pocket
 6. Hand Pockets
 7. Attachable Cargo Pocket System
 8. Front Zippered Vent
 9. Cargo Flap Pockets
- 2mm Reflective Piping
 - 4 Way Stretch Woven Twill | 90% Polyester, 10% Spandex
 - 3-ply Storm flit | 100% Polyester w/ Trico Lining
 - Plastic Snap Hook
 - Plastic snaps | 12mm
 - 1.5in Nylon Webbing
 - 28 in Mag Zipper
 - 9 in Separating Zipper x 2
 - 15 in 2-Way Separating Zipper

HAT COLORWAYS



Pantone: 7484



Pantone: Cool Grey 9C



Pantone: 7533C



Pantone: Cool Grey 9C



Pantone: 419C



Pantone: 384C



Pantone: 419C



Pantone: 384C

SHIRT COLORWAYS



Pantone: 454C



Pantone: 4625C



Pantone: 5747C



Pantone: Cool Grey 9C

PANT COLORWAYS



JACKET COLORWAYS



PACKAGING



UNIFORM 5 PANEL HAT



- 1. Reflective Piping**
Amplified visibility in the dark
- 2. Birds Eye Mesh Side Panel**
Airflow and heat escape
- 3. Adjustable Pipped Draw Cord**
360 Secure fit around head
- 4. Fleur De Les Sweat Band**
Light weight & breathable for comfort in extreme weather conditions

LONG SLEEVE UNIFORM TOP



1. Reflective Piping

Amplified visibility in the dark

2. Stretch Polyester Raglan Flex Sleeve

Adaptable with varying shoulder widths

3. Top, Bottom Sleeve & Side Mesh Vents

Air flow & heat escape for arms and torso

4. Rapid Quick Pull Sleeve

Quick adaptability for situational environments

5. Pen Pocket, Epaulet & Snap Hook

Small storage for belongings

6. Zip Chest Pocket

Secure storage for important belongings

UNIFORM/HIKING PANT



1. Reflective Piping

Amplified visibility in the dark

2. Accordion Front Pocket

Reduces material bunching

3. Rapid Capri Pull

Quick adaptability for situational environments

4. Zip Off Capri Panel

Adaptability to changing environments

5. Attachable Cargo Pocket System

Removable pockets that can attach to belt and jacket by nylon loops and plastic snaps

HIKING OUTERWEAR SHELL



1. Reflective Piping

Amplified visibility in the dark

2. Stretch Polyester Raglan Flex Sleeve

Adaptable with varying shoulder widths. DWR Finish for waterproofing

3. 360 Torso Ventilation

Airflow and Heat escape in the torso. Zipper closure

4. Zip Chest Utility Pocket

3 patch Pockets & Snap hook to secure belongings

5. Attachable Cargo Pocket System

Removable pockets that can attach to pant and jacket by nylon loops and plastic snaps









VALIDATION

"Love the 360 breathability on the jacket"

"The reflective piping on all the garments looks amazing!"

"These feel so modern and really feels unique as Scouting apparel"

"Removable pockets would lighten the load during a long hike"





PROFESSIONAL STATEMENT

This project supports my desire to design inclusive athletic apparel along with demonstrating my skills to creating a cohesive apparel collection. This project also embodies my top five Strength Finder strengths consisting of developer, empathy, positivity, adaptability, and communication. The developer “strength” allowed me to see the potential in redesigning Scout BSA apparel for adolescent male and female. My “empathy” strength is utilized when researching the wants, needs and feelings of adolescent Scouts, whose bodies function differently from adults due to maturation. The outdoor sports product, specifically for young athletes is lacking, opening up an opportunity to design an apparel collection to fit the needs of this segment. Throughout this project, I also needed to maintain a “positive” attitude knowing that I would run into roadblocks that I needed to overcome and “adapt” to in order to effectively “communicate” how my collection will benefit young Scouts who attend the Philmont Scouting Ranch. s

Golden Circle Statement

As an apparel designer and a believer in the enjoyment of sports, I want to allow all athletes to feel & perform at their best daily, allowing them to not only push themselves but to enjoy their chosen activity.

Mentors

Nancy Zan | Columbia Sportswear | Apparel Designer II

Applied Experience: Ideation, sketching and outwear design for both men and women

Zan, Nancy <Nancy.Zan@columbia.com>

Tue 11/23/2021 1:41 PM

To: Bryan Lau

Hi Bryan,

Great to meet and chat with you last week as well! I can confirm acceptance of the mentorship and meeting at least once a month until the thesis project is over. Looking forward to seeing how your project progresses, and feel free to reach out if I can help with anything as things come up.

Enjoy the Thanksgiving break!

Nancy

Nancy Zan (she/her) | Apparel Designer II | Columbia Sportswear Company

Rachel Ancliffe | Wildfang | Apparel Product Designer

Applied Experience: Sourcing, pattern making, youth apparel design



Rachel Ancliffe <ancliffe@gmail.com>

Tue 11/23/2021 4:34 PM

To: Bryan Lau

Hello Bryan,

I'm so happy that you reached out to me and we were able to talk this last week. I really enjoyed it.

YES, I am accepting this mentorship of you and the project that you are working on. I am looking forward to our meetings as need (x1 per month minimum) and seeing what you do with this project.

I understand that this is a commitment until June - when the project is complete. Looking forward to this project.

Thank you for choosing me as one of your mentors. Have a great holiday weekend.

Best,
Rachel

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Reply Forward

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