

No part of the candidate's evidence in this exemplar material
may be presented in an external assessment for the purpose
of gaining an NZQA qualification or award.

SCHOLARSHIP EXEMPLAR



Scholarship 2022

Technology

No part of the candidate's evidence in this exemplar material
may be presented in an external assessment for the purpose
of gaining an NZQA qualification or award.

UNIFORM

DEC.

"ANYTIME YOU'RE
PUTTING BARRIERS UP
IN YOUR LIFE, YOU'RE
LIMITING YOURSELF"

ANYTIME BARRIERS ARE
PUT UP IN YOUR LIFE,
THEY ARE LIMITING YOU

SCHOLARSHIP REPORT
TECHNOLOGY 2022

Contents

1) INTRODUCTION

- The Context
- The Issue
- The Need
- The Opportunity

2) UNPACKING THE CONTEXT - GENDER DIVERSITY

3) UNPACKING THE ISSUE - SCHOOL UNIFORMS

- History of school uniforms
- H█████ Uniform
- Student survey
- Uniform analysis + Lincoln High School case study

4) UNPACKING THE NEED

- Day in the life
- History of women's trousers

5) UNPACKING THE OPPORTUNITY

- Initial brief/Conceptual statement
- Initial attributes
- Stakeholders specified and explained

6) Existing solutions analysis

- 7) Androgynous fashion
 - Grace Jones
 - Harry Styles

8) Ideation

9) Kaitiakitanga

10) Pattern drafting

- Copyright

11) Testing

- Initial mock ups
- Waistband
- Faux Fly
- Pockets
- Hems

12) Fabric selection

13) Legalities - care labelling

14) Seam testing etc.

15) Codes of practise

16) Fabric Layout

17) Manufacturing

18) Evaluation

- Life cycle analysis

THE CONTEXT

Despite the growing awareness surrounding gender diversity, there is still a lack of acknowledgement of this in New Zealand schools. A recent University of Auckland study highlighted that over 40% of trans and gender diverse youth in schools are "experiencing significant depressive symptoms." What we wear impacts how we feel about ourselves. Our sense of identity is closely tied to our choice of clothing.

Clothing is an "identification" tool that functions in determining the symbolic boundaries between people. Fashion is a field where clothes are used to create and reveal a cultural and social identity. The identity phenomenon of the person is embodied by clothing and fashion they chose to wear.

<https://dergipark.org.tr/tr/download/article-file/543644>

THE ISSUE

I am a Year 13 student at a coeducational public school in a middle class area of Hawkes Bay. I have studied fashion and fabric technology for four years and over my time as a high school student I have observed massive changes not only within the school itself but more significantly in the students and how they wish to present as individuals. The supposed growing acceptance of individual gender expressions is not reflected by the way students at my school are required to present themselves inside and outside the school setting. I believe our school uniform limits individuality and shuts down differences.

THE NEED

Traditional gender binaries are communicated across my school environment through our current school uniform. Our 'girls' uniform is a fitted collared short-sleeved blouse, and all girls are required to wear skirts. Our boys uniform is a boxy-collared shirt worn with shorts. The majority of people I spoke to before doing this scholarship agreed that our current uniform is old-fashioned and does not reflect the growing acceptance of self-expression. It is also highly impractical for the everyday activities that students do at school.

THE OPPORTUNITY

Something as simple as changing aspects of a school uniform to make students feel more included and comfortable at school can have an immense impact on wellbeing. As a fashion and fabric technology student in my last year of school, I see this as the perfect opportunity for me to alter the perceptions within the school and local community and build greater awareness of gender diversity. I will work with stakeholders to design, develop and manufacture a garment that can be worn as a part of the school uniform that is inclusive for all genders.

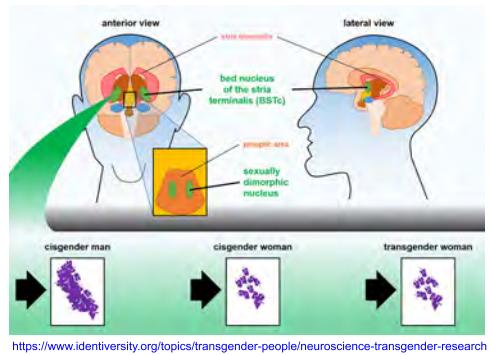
UNPACKING THE CONTEXT

GENDER DIVERSITY

Gender diversity is a term used to encompass all people beyond the gender binary that many of us are familiar with. It relates to the gender expression of individuals who present non-conforming to the expected characteristics of one's sex at birth. This can include but is not limited to non-binary, gender-fluid, and transgender.

Gender diversity cannot be attributed to a certain cause, but many studies recently have been determining a biological explanation of why individuals may not align with their assigned sex at birth. For example, transgender women have been found to have similar brain compositions to cisgender women and vice versa.

According to the 2020 census, almost 1% of New Zealanders identify as transgender, or non-binary



GENDER DYSPHORIA

Gender dysphoria can result from someone who may be gender diverse. Gender dysphoria, as defined by <https://www.mayoclinic.org/>, is “the feeling of discomfort or distress that might occur in people whose gender identity differs from their sex assigned at birth or sex-related physical characteristics”.

Societal standards can often add to one's gender dysphoria and heighten anxiousness. In some, it affects how they cope in social settings such as school or work. Those who experience gender dysphoria tend to do so especially around the time of puberty (around ages 11-16), as their bodies may go through unwanted changes. Gender dysphoria often makes those affected feel insecure about certain body parts. This causes confusion as their bodies do not align with how they wish to present.

ETHICAL CONSIDERATIONS

As a part of my project, I felt it was of huge importance to work with the gender diverse and LGBTQ+ communities within my school. Obviously, I needed to be informed of these communities and be open to learn more from them and their situations. It is necessary to always respect them as human-beings. This meant to use their preferred pronouns, listen to any recommendations they had, and show overall kindness to this already vulnerable group. To ensure I did not use any offensive terms and had my information correct, I checked everything through my three key stakeholders, H [redacted], R [redacted], and P [redacted]. I also considered the following legal requirements surrounding client ethics.

LEGALITIES - NZ Conduct and Client Care Rules 2008

- 1.Understand what constitutes a multiple relationship
- 2.Protect confidentiality

- 3.Respect people's autonomy
- 4.Ensure consent
- 5.Respect boundaries

UNPACKING THE ISSUE

These three students, along with Mrs M [REDACTED], helped introduce me to a group of people who were a part of/familiar with the gender diverse and LGBTQ+ communities within our school. My initial meeting with this group saw fifty students line up to speak to me within a matter of minutes. The passion I felt was overwhelming, and I felt a strong need to help with anything that could benefit them. Following this meeting, I sent a survey to them all to get some further input.

What do you think the issues are with forcing students to either wear the masculine or feminine uniform at school?

32 responses

Recently, it does reinforce the stereotype that women should wear skirts and blouses and that they should only present masculinly and not wear or look anything like women.

I think it's mostly because we've been told that the boys wear this, the girls wear this, and if you aren't either or, you just have to pick.

They won't be able to experiment as easily as they want to, it could also make them feel like they're not themselves.

The issues go far and deep, not only is it uncomfortable to trans, non binary or gender fluid people to be forced to wear something that they don't identify with or want to be perceived as but it creates a greater divide between the genders and enforces an unfair and outdated binary. women nowadays fight so hard for gender equality why should they still be forced to wear uncomfortable tight shirts and skirts? the boys may get to wear a lot more comfortable or looser clothing but it is of a significantly worse quality and they don't have anything long (like pants or the option of tights) to wear in the winter. Enforcing the binary is oppressing and shoving down the respect and voices of gender non conforming people and is incredibly dangerous and destructive to our mental health. please, do not let this project fall through. make them listen.)

It restricts them and places them in a gender stereotype. If sporty people in feminine uniform wear skirts at

Do you think there is a stigma around wearing the 'unexpected' uniform for your gender? - PLEASE ELABORATE

29 responses

Definitely, if I were to show up to school in shorts and a grey shirt because I was sick of people being able to see through my shirt and up my skirt I would be asked a lot of questions and get a lot of looks, some people will even be bullied for it. This is an issue in these modern times because it doesn't allow teenagers to be who they want to be without being afraid of getting judged from their classmates. Like if a girl literally just wanted to wear the guy's uniform because they weren't comfortable with how exposing the girl's one is, they would be judged.

Yes, you'll stick out because you don't look like you should be wearing the uniform you feel comfortable in and you might feel pressured to wear the expected uniform even though you don't feel comfortable in it

Yes!!! People simply have been brought up in a society where girls are girls who wear girl clothes and boys are boys who wear boy clothes. There is a lack of education around these issues and often it isn't the fault of the people who are feeding this stigma, but rather just how they have been clobbered to think.

yes. some people still think that if "girls" wear the "boys" uniform its weird and vice versa. "girls aRe sUpPoSeD To Wear FeMiNinE THinGs and BoYs aRe SuPpoSeD To WeAr MaScuLiNTHinGs" like no? people should be able to wear whatever uniform they want to, but some people are scared that if they do they'll get bullied by other students or teachers etc. people who don't identify as either male or female

How does the current school uniform make you feel? (physically and emotionally)

31 responses

I really don't like having the white shirt as it is quite see through at times and the buttons aren't great or fair for people with a bigger chest than others. I also don't feel comfortable in the skirts all the time and I know a lot of people who don't feel comfortable in skirts but unfortunately the dress code makes it so they have to wear it.

The girls shirt suck. The white shows the smallest stain, are unable to be bleached, are uncomfortably shaped around chest. The skirts flash everyone in the slightest wind.

I really hate the blouse especially as I really dont like how it fits me - especially as someone with a bigger chest and gender & body dysphoria issues, this uniform literally highlights all my insecurities which makes my body dysmorphia issues go which makes me feel even more stressed at school. It also goes see through when it rains which I hate. I also never wear skirts so I'd like them gone.

I compare how I look in the uniform to how my peers look. It causes me to feel very self-conscious, lowers my self esteem and affects my confidence when interacting with my peers. I also feel incredibly uncomfortable knowing that others are able to see what my bra looks like through my blouse if I wear any colour other than white.

The skirt makes me feel very uncomfortable, and the shirt is quite restricting and annoying.

What are some of the positive things about our uniform already?

30 responses

The jacket

the blazers

The formal uniform blazer and the tie and the jackets

the cardigans are comfy

The jackets and cardigans are very comfortable and unisex

The shorts are good and have big pockets.

idk like nothing

I like the jacket and the P.E uniform which are gender neutral.

The number ones look nice but are hot in the summer as I can imagine. The jacket has the ability to put away the hood and has plenty of pockets.

It was obvious from the responses I got that our current uniform is outdated and only accommodates for traditional gender binaries. The division caused by uniforms can be derived all the way back from the introduction of school uniforms 10 thousand years ago. Why is school uniform still causing segregation and inequality in the 21st century?

HISTORY OF SCHOOL UNIFORMS

Uniform: “the distinctive clothing worn by members of the same organisation or body or by children attending certain schools”

Uniforms were introduced within businesses, schools and more, to create a look of cohesion and professionalism. The first record of any form of school uniform was the **Cappa Clausa** in 1222.



What is a Cappa Clausa? The Cappa Clausa was a long robe that tied at the waist (much like the Hogwarts uniform from Harry Potter). It was worn with knee-high socks, a white collar and shorts for boys or a skirt for girls (as shown in the photo to the left). This uniform was ordered to be worn by school scholars to show their importance and emphasise the lower class students.

The first school to implement a uniform among all students was Christ's Hospital School in England in 1552. School uniforms took off in popularity however in the 16th century, but were still primarily used in the United Kingdom and commonwealth countries.

Early styles of uniforms always had a masculine uniform that all the boys were required to wear. This often consisted of knee-high socks, shorts, button up shirt, blazer and sometimes a tie. And a feminine uniform that often was either a pinafore or skirt to be worn with pantyhose. This supposedly forms a discipline and ‘teaches each gender how to dress in the real world.’

Why do we still have uniforms today?

Some stress the importance of uniforms to create a good image for their school. It looks more professional and in turn results in the community believing the school offers a good education. Others suggest it minimises the obviousness of financial hardship. “The uniform is supposed to make everyone equal, and prevent “competitive dressing”. - Joanne McDougall (stuff.co.nz)

And though these things may reign true, there's many other underlying issues that come with forcing students into the traditional gender binary way of uniforms.

From student survey:

the issues go far and deep. not only is it uncomfortable to trans, non binary or gender fluid people to be forced to wear something that they don't identify with or want to be perceived as but it creates a greater divide between the genders and enforces an unfair and outdated binary. women nowadays fight so hard for gender equality why should they still be forced to wear uncomfortable tight shirts and skirts? the boys may get to wear a lot more comfortable or looser clothing but it is of a significantly worse quality and they don't have anything long (like pants or the option of tights) to wear in the winter. Enforcing the binary is oppressing and shoving down the respect and voices of gender non conforming people and is incredibly dangerous and destructive to our mental health. please, do not let this project fall through. make them listen :)

OUR SCHOOL UNIFORM



THE OLD UNIFORM



I had been made aware of the fact, that six years prior to my arrival at high school, the uniform had been changed to what our current students wear now. This was one of the huge initial changes our principal made to our school when he first started here at [REDACTED] in 2012.

The girls wore:

- Plaid, zip front, collared dresses
- Roman sandals or black school lace ups
- Maroon vest

The boys wore:

- Light blue collared shirts
- Grey shorts
- Knee high socks with black school lace ups or roman sandals

This uniform had been around since the very start of [REDACTED] which began in 1975 , and it was apparent to staff, students, and the community that the uniform at the time was now outdated and needed to be updated.

To gain some further knowledge about the uniform change, I contacted our principal [REDACTED] who initiated this change here at [REDACTED].

11TH April 2022

Hi H [REDACTED]

With respect to your questions:

Why did you feel like a uniform change was necessary?

When I arrived in the school in 2012, the first thing that I did was to meet with all of the staff, lots of the students, and many people in the community, to gauge their feelings about the school. I asked them what they thought of the school, what we were doing well and what we could do better. I also asked them if there was any thing that they would like to see changed about the school. By far the thing that most people wanted to change, was the uniform. They felt that it was tired, dated, the colours were ugly and the students felt second rate in the village in comparison to the other schools. Possibly the most telling comment came from a Year 12 boy who said that he felt embarrassed in the village compared to students from the other schools, that drew students from the community. At that point I made the vow that my students should not feel second rate to anyone and we needed to address this concern.

What year did the uniform change?

The designs were approved in early 2013 with the intention to make a graduated switch in 2014, initially with Year 9's and then Year 10's the following year. Such was the desire to change that virtually the entire Year 10 took up the uniform in the first year along with a sizeable number of Year 11's.

Who was involved in the uniform change and what was the process?

The process involved initially establishing a 'Uniform Review Working Group' representing each of the interest groups in the school. Students were represented, the Board was represented, Parents were represented, the Staff were represented, and the PTA were represented.

Mrs [REDACTED] (ex HOD Technology) and I, worked on a set of principles around what was required from a school uniform and reflected what the community had indicated – things like quality of garments, a year round uniform, timeless design (conservative yet smart), value for money, durable fabrics, suitability of garments for the environment, a story board that was inter-related and had a dual functionality.

This was presented to the working group as being the basis for our decision-making. From there, Mrs R [REDACTED] and I developed a brief that was distributed to fourteen uniform suppliers. Replies in pdf form were received back from eight and some of the suppliers also provided fabric samples and samples of uniform items. Three companies were shortlisted to present to the working group, with New Zealand Uniforms being selected as the preferred provider. The key factors in the decision about which supplier to work with were their ability to deliver across the entire range of our uniform requirements (school and sports uniform), the quality of their garments, and the depth of experience that they had in this space.

How did the students react to this uniform change? Was it appreciated? Did you receive any negative feedback?

The feedback from all sectors of the community was universally positive. The fact that so many bought the uniform in the initial release, completely supported this. Many of our students were the recipients of positive comments and this in itself created a really positive feeling amongst everyone. The only negative feedback I received was from one or two

people complaining about the cost of the boys' shirts; but once I explained the principles behind the uniform they were more than satisfied and understood the reasons behind the decision

What was the community's response?

The community's response was universally positive. I received a large number of emails, letters, phone calls and personal comments about how good the uniform looked. When students travelled in Number 1's they were stopped in the street to ask what school they were from. When our choirs went to Big Sing, other schools were very envious of our new uniform and a number told our students how they wished that they had a smart uniform like ours.

Did you communicate with the students what they wanted in a school uniform and if so what did they express to you?

Students were certainly part of the initial consultation and then several students were part of the working group to review and design the uniform. When designs and mock ups were sent to the school to consider, many students tried them on, and gave feedback. One of the students on the working group talked about trousers for girls, but when we surveyed the students, very few girls were supportive of this.

Overall, students have been very supportive of the change, with certain garments having more popularity than others. The school jacket was designed to match with tracksuit pants to provide a school tracksuit with dual functionality. Sales of the jacket exceeded expectations while there were very few sales of the track pants.

Over-riding everything in my mind is ensuring that our students do not feel second rate to anyone. To that end, we have certainly achieved our goal.

G [REDACTED]
PRINCIPAL

What did I learn from this letter from the Principal?

I was informed on the specifications that were focused on during the design process - quality, timelessness, durability, suitability for the environment, "conservative yet smart", and value for money. It was also mentioned that there was a desire for dual functionality, which could potentially be something I investigate further. Overall, The uniform change was successful in what it set out to achieve, benign to create a more modern, timeless design that made students feel proud in the village.



Existing uniform:

PROS	CONS
<p>Student feedback:</p> <p>“the blazers”</p> <p>“The jackets and cardigans are very comfortable and unisex, warm and waterproof</p> <p>The shorts are good and have big pockets.”</p> <p>“the P.E uniform which is gender neutral - the fabric of the shirt isn't itchy or see-through and the shorts have big pockets.”</p> <p>“The jacket has the ability to put away the hood and has plenty of pockets.”</p> <p>“The colours”</p> <p>“Looks really professional and nice, gives unity to the school”</p> <p>“It's comfortable, breathable, and durable.”</p> <p>“The PE uniform is also comfortable Basically everything that roughly looks the same gender-wise is great.”</p> <p>To summarise, it is apparent students really appreciate the quality of functionality of the garments they wear. High praises were given to the jacket and P.E. uniform, which both are fit for purpose and do not segregate the students by ‘girl’ and ‘boy’. Other attributes that gained compliments include the colours, and the sense of unity and professionalism that the uniform creates between all.</p>	<p>Skirt:</p> <p>“High slit in the back is revealing, makes me anxious to be active, makes me self conscious”</p> <p>“Twists and lining bunches up”</p> <p>“Lack of pockets. There's only one side seam pocket and it barely fits a pencil”</p> <p>“Constantly needs to be adjusted because of the slippery lining “</p> <p>‘Girls’ Blouse:</p> <p>“Ill fitting - buttons pop off as I grow. It doesn't fit many body types. Even if you size it up it may fit your breasts but be too large in the waist and shoulders.”</p> <p>“White fabric stains easily and goes see through in the rain or when I sweat”</p> <p>Overall, the majority of the feedback I received was directed negatively to the ‘girls’ uniform, with students stating that it added to their gender dysphoria and made them feel uncomfortable and anxious. They expressed a lack of inclusivity for all genders and the segregation that our current school uniform brings to students. It's restrictive and does not make all students feel comfortable and confident.</p>

I felt it was important to observe how other schools approach their school uniforms. This helped to inform me on things I needed to consider throughout my project.

ANALYSING UNIFORMS

NEW ZEALAND HIGH SCHOOL UNIFORMS	PLUS	MINUS	INTERESTING
 https://www.bayfield-high.school.nz/future-students/uniform	There are two different options for girls: patterned skirt, or plain skirt And two different options for boys: trousers, or shorts Top half on everyone is cohesive and inclusive.	It seems that despite there being 4 options, each gender (boy or girl) is only limited to their allocated garments. Not much inclusivity for those affected by this.	Why does only one of the four bottom half garments have pattern?
 https://www.nzherald.co.nz/nz/massay-high-school-student-revolt-over-new-uniform/YREI4VKELGZV432GQRQ8IE4E/	Top half on everyone is cohesive and inclusive. Coordinating bottom half especially with the skirt and trousers being of the same length. Socially appropriate - modest and tidy.	Definite 'girls' uniform and 'boys uniform'	Not very transeasonal. Is there a summer option?
 https://www.pouerano.co.nz/lavalava-buy-bodywear-uniforms-lavalava-introduces-lavalava-as-part-of-dress-code/N7YUfE3CC04TEYPAXVHRZ6E/	Lavalava: "It is a formal expression of culture and also acknowledges their heritage. It shows that we value them and their culture." - Mr Sturch (school's principal)	Fabric appears to crease easily. Lessens professional appearance of garment.	"Mr Sturch said he did not believe it would be incorporated into the daily school uniform" - stuff.co.nz
 https://www.lincoln-school.nz/assets/PDFs/Updated-Uniform-book-2019.pdf	Not gender labelled. Inclusive for all to mix and match to their comfortability. This in turn, influences wearer's confidence.	Could look less tidy and 'uniform' with everyone wearing a variety of different garments.	Why still chose to have a uniform when cohesion is lessened as a result to trying to cater for all?

Uniforms should accommodate students' beliefs, including religion, culture, background, gender and more to make them feel confident and comfortable in their environment. This, in turn, allows them to achieve to the best of their ability.

The uniforms in which I have analysed have both positive and negative features, but the ones that stand out most such as the lava lava uniform and Lincoln High School's gender-less uniform allow students to express their individuality whilst maintaining the purpose of a uniform, which is to create a professional cohesive look for the school.

CASE STUDY - LINCOLN HIGH SCHOOL

From my initial analysis of Lincoln High School's uniform earlier, an article done by News Hub was brought to my attention. It outlined Lincoln High School's uniform change, and I decided to research it further.



Lincoln High School (Christchurch), introduced a 'gender-less' uniform to ensure the comfort of all students despite their gender identity. Their uniform is made up of multiple components that students can mix and match to their desire. Instead of using terms such as "girls uniform" and "boys uniform" which are very dividing, the school uses the expressions "tailored" and "fitted" to inform the student on the fit of the garment.

I reached out to a couple of students at the school to get their point of view of the new uniform, and the responses I got are as follows:

What were the reactions of the community by breaking the 'norms'?

2 responses

Quite surprisingly, we were met with some dissapoval and condescending questions. One of our peers had a bit of banter coming from their mates about what was said in articles. although this was a small majority, it was more than what we expected. Especially as you would expect that now more than ever, people would be progressive. But overall, we had quite alot of support coming from whanau and the community.

Honestly, I am not entirely sure, as I can only speak from my own experience. From what I saw, communities within school had no problem with the change, but of course, no system is without problems. It is the nature of students at a school to complain about the uniform but from what I see, there are a large number of students who are grateful for this approach to the uniform, and prefer our system to the usual boy/girl uniforms.

Did you find any challenges that arose during the introduction of gender neutral uniform options within your school?

2 responses

No there wasn't. But I think something LHS did right was to give the right support to those students considering or exploring who they are with different clothing options via the school councilors

No, the students who were most greatly affected were pleased, and the students who were less affected weren't bothered about the change.

How much of a positive impact has this brought to your school and your students?

2 responses

I would say it is quite substantial. This may be swept under the rug for those students who go by society's 'norm' but it creates a much safer place for people who identify as anything else. This also shows that Lincoln High is a school which supports and makes an effort to be progressive and make a change towards a safer community. This in turn, makes students feel as their voices will be heard if they have issues or need support.

I would say it's brought a very positive impact to the school because it allows students to choose the uniform options that they feel most comfortable with, rather than being restricted to the options typically aligned with their birth sex.

What encouraged you to make this change within your school?

2 responses

This was in the works well before I got this role, but our SLT has had strong voice and feedback from our rangatahi which aligned with their own personal views

Within the school community recently there have been more students coming forward as openly gender non-conforming or gender diverse so having uniforms that are accommodating of these students can help these students feel and be supported.

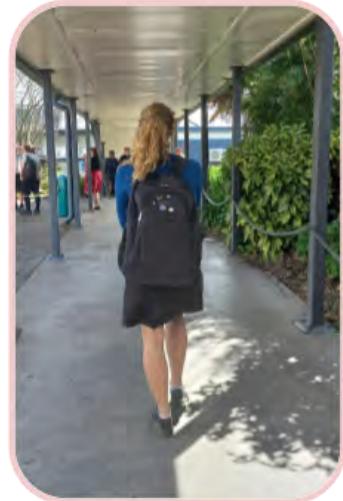
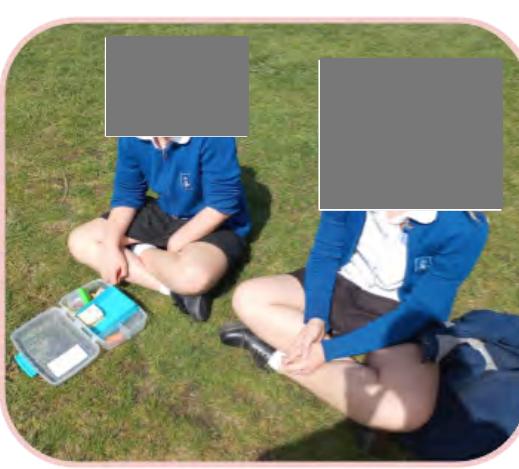
I just wanted to note that as a gender-diverse student myself, this way of organising the uniform has greatly positively impacted my school experience. If considering a similar thing at your school, I would encourage working with your school's QSA or Rainbow Group, as they're likely to have good ideas and strong opinions as to how a different uniform system might look.

By investigating Lincoln High School I am considering a broader sense beyond HNHS. It has informed me of context considerations and the need to work closely with the rainbow community within my school.

UNPACKING THE NEED

Throughout the day, students do a variety of activities from their way of commuting, whether this be cycling walking, or driving, to the activities they do at school which are as follows:

TYPICAL DAILY ACTIVITIES OF A STUDENT



Sitting at a desk

Observations:

H [REDACTED] - "You have to make sure that you have your legs closed because I am kind of scared of guys looking up my skirt - I know at least one guy who has admitted to doing that. Every time I sit down I have to move my skirt so that it isn't scrunchered up underneath me."

Sitting for lunch

Observations:

H [REDACTED] - "You can't really sit cross legged on the ground because your skirt rides up awkwardly so if you aren't wearing shorts underneath you kind of need to kneel. Skirts also restrict movement since your legs can't really move freely of each other."

Walking between classes

Observations:

H [REDACTED] - "The skirts twist around a lot and ride up especially if you have something in your pocket. You have to constantly adjust it because it feels uncomfortable and looks weird."

From my research into our current uniform, including feedback from stakeholders, and analysis of other school uniforms, I determined that a garment worn on the bottom half of the body would be most suited to create a significant change in the gender inclusivity of the uniform for [REDACTED].

This led me to ask: How did bottom half garments eventuate throughout history?

BUILDING ON CONTEXT: WOMEN'S HISTORY OF PANTS IN THE WESTERN CULTURE

14th + 15th centuries:

- Women and men both wore long robes. Essentially the exact same 'look' for both genders.

18th century:

- It was at the start of the 1800s that we can see an obvious definition between female and male clothing. Women primarily wore skirts + dresses, whereas men could wear trousers. In fact, they were restricted to wear only what was deemed appropriate for their gender and in France it even became law.
- The dress reform era of the 1850s saw the introduction of the '**bloomer suit**' for women (a lower half garment that was loose and gathered at each ankle). This was controversial as many say this as women 'losing the mystery and attractiveness' dressing in this way. It was seen as indecent, however despite the ridicule experienced from society, all women wanted was a garment that was less harmful to wear, a contrast to the unsafe tight corsets women were forced to wear. The bloomer also allowed them to be more **comfortable whilst being active**.

19th century:

Huge advancements on women in trousers - pants are just becoming normal for women to be seen wearing. In this century, we can see pants on high-fashion runways. In the early 1900s however, it was still daring to wear pants.

- 1911: Fashion designer Paul Poiret's debuts the '**harem pant**', a style many of us still know and love till this day.
- 1920's: '**Beach pyjama**', is introduced.
- 1930's: celebrities such as Katherine Hepburn and Marlene Dietrich wear pants more regularly with the intention to encourage others to do the same also.
- **1960's: Women in pants become common!!**



Women's advocacy for the normalisation of trousers was hugely admirable, and I believe was a **symbol of freedom**. It represented the right to expression, feminism, and ultimately resulted in a step further to equality between the genders. While this research revolves around women's trousers, I believe it can add to my context as it shows inclusivity for all.

UNPACKING THE OPPORTUNITY

ISSUE SUMMARISED	OPPORTUNITY
<ul style="list-style-type: none"> - Old-fashioned gender binary surrounding uniforms - Impracticality of aspects of current uniform - Lack of inclusivity for all genders 	work with stakeholders to design, develop, and produce a school uniform garment that is inclusive for all genders.

- Social -
environment

school colours

- Blue
- Dark grey / charcoal
- White

Haveluck North (the "Village")

People: modest principals + teachers, other students (different ethnicities, beliefs, genders, backgrounds etc...), Parents

SMT

Dress Code:
requires: modesty, neat/tidy, plain, even coloured, no frayed edges, sensible coverage (no shorter than mid-thigh length).

Dress Code

2. Emphasis will be on the condition of clothes and overall presentation. Singlets may not be worn by either sex. Strapless tops, three-quarter tops and strap singlets are not to be worn. No bare midriff clothes are to be worn. Clothing worn by all students should be modest at all times.
3. Items of clothing must not carry slogans or pictures that run contrary to the spirit and rules of the school or that could be considered objectionable, e.g. liquor advertising or unacceptable language.
4. Shoes/sandals must be worn at all times. No slippers, rubber/plastic jandals, ugg boots, gum boots, steel cap boots.
5. Jewellery and light makeup may be worn as long as it is in good taste. Discreet ear piercing is acceptable. Any other body piercing, jewellery or tattoos are not allowed.
6. Extreme hairstyles are not acceptable, either in length or colour.
7. Hats, caps and sunglasses must not be worn in the classroom.
8. Boys must be clean-shaven.
9. Trousers/jeans must be clean, tidy, plain and even-coloured. The following are not acceptable – frayed edged garments, ripped garments, studs, chains, ‘fat’ pants or pyjamas.
10. Shorts to be neat, plain coloured and no shorter than mid-thigh. Beach shorts, surf shorts, running shorts or brief shorts are not acceptable for boys or girls.

- Physical -
environment

school days per year: < 200
uniform worn: < 200 days per yr for 4 years of high school
DURABLE < 500 days

Lots of sitting in class.
↓
Indoors
Outdoors → at tables
COMFORTABLE / MOVEABLE

workshop / classroom environment (environment to me to work in)

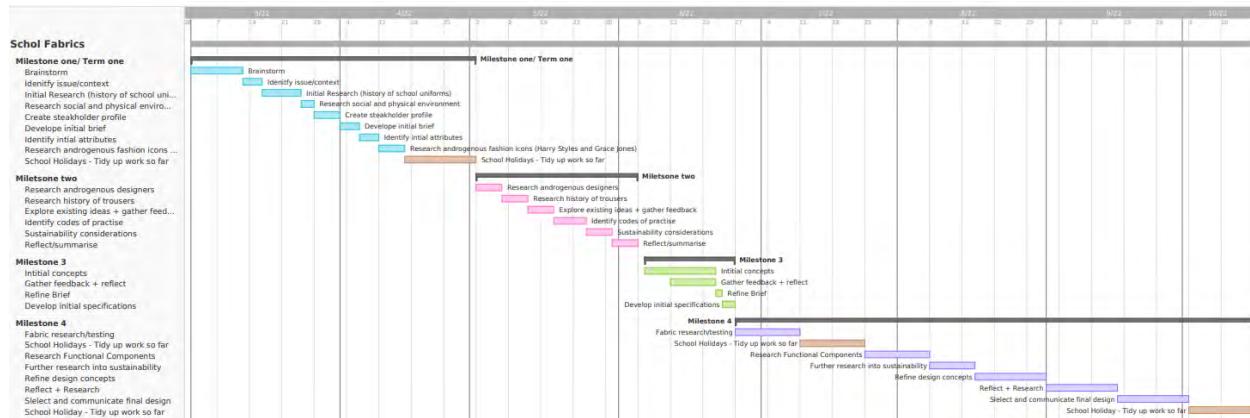
- tools and equipment (machines, scissors, thread, etc...)
- time extendable available (extra hours, after school, holidays...)

Latitude: Hastings
Winter - low: 5°
Summer - high: 30°
TRANS-SEASONAL

Harsh sun (often causes garments to fade)

current uniform

SOCIAL ENVIRONMENT	PHYSICAL ENVIRONMENT																		
<p>HNHS:</p> <table border="1"> <thead> <tr> <th>Gender</th><th>Count</th></tr> </thead> <tbody> <tr> <td>Diverse/Trans</td><td>5</td></tr> <tr> <td>Female</td><td>547</td></tr> <tr> <td>Male</td><td>501</td></tr> <tr> <td>Total</td><td>1053</td></tr> </tbody> </table> <p>Five out of 1053 students at our school have informed the school of being gender diverse/trans. This is not a representation of the actual number, but gives me confidence that there is a need for this garment. There is diversity in religion, culture, age and background that I had to be weary of throughout this project to ensure ethical considerations were met.</p> <p>Other people at our school include: Staff, parents, and visitors, all of which would expect any high school student to look tidy/smart.</p> <p>Havelock North Village:</p> <table border="1"> <thead> <tr> <th>Age Group</th><th>Percentage</th></tr> </thead> <tbody> <tr> <td>0-14 years</td><td>18.2%</td></tr> <tr> <td>15-64 years</td><td>55.6%</td></tr> <tr> <td>65+ years</td><td>26.2%</td></tr> </tbody> </table> <p>https://citypopulation.de/en/newzealand/northisland/hawkes_bay/1292_havelock_north/</p> <p>Many students walk through the village after school as a part of their commute. Others chose to hang out in the village whilst still wearing their uniform. Close to 30% of the population are over 65. Therefore, it is especially important to ensure no aspects of the design are offensive in any way particularly to this group of the population in public.</p>	Gender	Count	Diverse/Trans	5	Female	547	Male	501	Total	1053	Age Group	Percentage	0-14 years	18.2%	15-64 years	55.6%	65+ years	26.2%	<p>HNHSI: Activities within the environment stated as above - must allow for freedom of movement.</p> <p>Havelock North Village: Weather - the temperature in Hastings averages at about 25 degrees celsius in summer and 15 degrees in winter. In the summer the sun can be especially harsh and cause some fabrics to fade (need to include prevention methods on care labels).</p> <p>Resources available to me throughout my project: I will be able to use the fabrics classroom within school hours. This gives me access to all the equipment I may need. This is also when I will be able to gain feedback from teachers and stakeholders within school.</p> <p>Any additional time I may require out of this must be done, not in the classroom. Therefore, I must ensure I have any equipment I may need at home to allow me to continue and not fall short of time. I have completed an initial time plan Gantt chart as seen below.</p>
Gender	Count																		
Diverse/Trans	5																		
Female	547																		
Male	501																		
Total	1053																		
Age Group	Percentage																		
0-14 years	18.2%																		
15-64 years	55.6%																		
65+ years	26.2%																		



INITIAL BRIEF/CONCEPTUAL STATEMENT

I will work with stakeholders to design, model, and prototype a bottom-half garment to be worn by [REDACTED] students as a part of the school uniform. Our current school uniform is not inclusive for all genders and makes some feel insecure within their bodies, causing them to feel anxious and perform less well in the high school setting as a result. The garment should accommodate for various figures (masculine and feminine) and will need to be appropriate for both the social and physical aspects of the environment of [REDACTED] village and the school itself. I will be using resources within the fabric's classroom in school to help me throughout my project. As this room is only available to me during school hours, I will need to be considerate of time.

From my evaluation of the environment of which these trousers will be worn, I have come up with the following:

PHYSICAL SPECIFICATIONS	REASONING/EXPLANATION
Modest	In a school environment, it is important to be modest, as specified by our school dress code. In the context of clothing, this may mean not too tight or revealing with moderate skin coverage. The culture in our school is not strict on the visibility of knees, ankles etc.
'Plain'	:as specified by our school dress code. This means not to be too patterned or have an inappropriate print/wording on garments.
'Even-coloured'	:as specified by our school dress code. E.g. no fading/discolouration on the garment. Makes for a more professional/tidy look. Suitable for the environment of a school.
Cohesive with current uniform	Our current school uniform colours are dark blue, charcoal, grey and white.
FUNCTIONAL SPECIFICATIONS	REASONING/EXPLANATION
Comfortable/Moveable	Students do a variety of activities throughout the day that require comfort/moveability.
Sustainable	As this garment would likely be made in bulk batches, it is especially important that the environmental impact of this garment is minimal. This could relate to the longevity of the garment, the composition of the fabric etc.
Trans-seasonal	Hastings weather varies throughout the year and can be anywhere between 5 and 30 degrees celsius.

Durable	Must last for the 4 years it will be worn at high school. This could relate to fabric quality, seam quality, fit etc.
Washable	Must be washable in the typical family wash - the quality of the garment must not be compromised when washed
Fit a variety of body types	Not only should this garment last an individual the entirety of high school (body changing), it must also fit a variety of genders to be a unisex uniform option.

STAKEHOLDERS

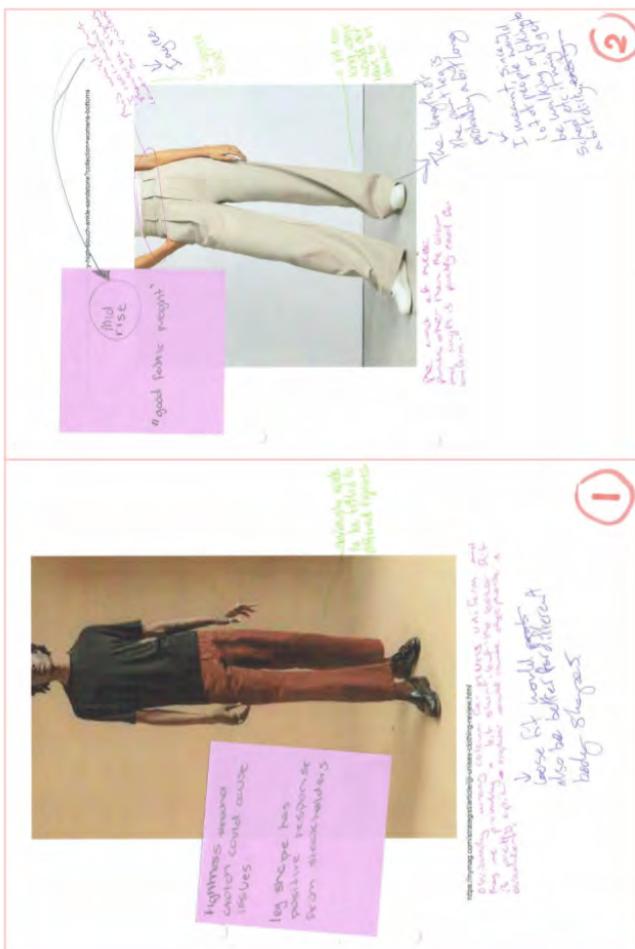
In order of importance/relevance to my project:

Name	About	Relevance to project
H ██████████ B P ██████████ F R ██████████ P	Students of ██████████ High School (████████ HS). All members of the LGBTQ+ community.	Student perspective LGBTQ+ perspective Daily wearers of the current school uniform
Surveys - Wide array of Students	When sending surveys out I send them to a group of around 50 people of various genders, ethnicities, ages etc.,	A broad spectrum of input from the target market.
A ██████████ W ██████████	Runs uniform shop at school,	knows what's popular/what's not with students and parents. Often receives complaints/feedback from customers and works closely with our current uniform.
Miss P	Current fabrics teacher	Knowledgeable and skilled. Can give me valuable advice on techniques/other considerations.
Mrs M ██████████	Known for her support to the LGBTQ+ community within our school. Science teacher.	Has plenty of resources to lend me along with personal experience and recommendations. (Teacher's perspective to the context/issue)
C ██████████ D ██████████	EIT fabrics teacher. Pattern	Very skillful and informative

	drafter.	with a lot of experience in pattern drafting.
Mrs H [REDACTED]	Business Teacher	Can inform me on legalities/copyright etc.
Students of [REDACTED] High School		[REDACTED] High school have implemented a 'genderless' uniform within their school.
K [REDACTED] R [REDACTED]	Student Rep.	Student voice. Attends PTA meetings. Has tried to push for change for the uniform to be more inclusive.

Exploring existing bottom half garments

I met with my 'clients', P [REDACTED], H [REDACTED], and R [REDACTED] to get their opinion on some shorts/trousers and their suitability for our situation.

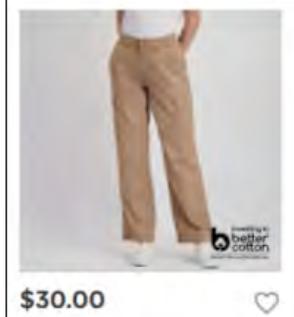


STAKEHOLDER FEEDBACK:

- 1) Looser leg fit works well for unisex trouser
Clashing colour
A bit too short
- 2) Like the waistband with belt loops + fly
Approve of wide leg fit
Too long (would drag on ground)
Too high rise - preference would be mid rise.
- 3) Colour is suitable
Lack of adjustability for a range of body types
Would prefer trousers "more trans-seasonal"
- 4) Pockets! Large pockets are hugely desirable
Colour is suitable
Again, would prefer trousers over shorts

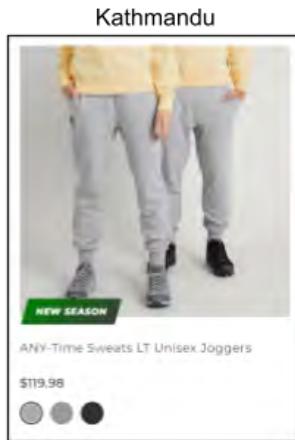


From this consultation it was obvious that it would be most suitable to design trousers.
I then investigated further into trouser and what is currently available in the market.

Kmart	Farmers	Warehouse
 Pull On Straight Leg Pants \$14.00	 SPECIAL OFFER Lairdlew + Leeds Tailored Linen Blend Pant, Sand \$89.99	 \$30.00 H&H Women's Wide Leg Cargo Pants

<p>Pros:</p> <ul style="list-style-type: none"> - Colour is suited to current uniform colours - Looks professional - Has pockets - Affordable <p>Cons:</p> <ul style="list-style-type: none"> - No adjustability around waist for different figures - Tight fit around crotch could add to body dysphoria 	<p>Pros:</p> <ul style="list-style-type: none"> - Looks tidy/formal - Belt loops allows for belt - Has pockets <p>Cons:</p> <ul style="list-style-type: none"> - Beige would not coordinate with current uniform colours - Shaped for a masculine figure and will likely look ill-fitting on a feminine figure. 	<p>Pros:</p> <ul style="list-style-type: none"> - Wide fit of leg creates comfort and more freedom of movement - Lots of decent sized pockets - Affordable <p>Cons:</p> <ul style="list-style-type: none"> - Colour is not cohesive with current uniform colours - Cargo style could look too informal
---	--	---

Lazyoaf.com
Sorry We're Open Navy Carpenter Unisex Pants



Pros:
<ul style="list-style-type: none"> - Colour is suited to current uniform colours - Unisex fit is inclusive for all genders
Cons:
<ul style="list-style-type: none"> - No adjustability around waist for growth over time - Baggy fit makes garment less formal

Pros:
<ul style="list-style-type: none"> - Unisex fit is inclusive for all genders - Fit of trouser appears to be comfortable and allow for freedom of movement
Cons:
<ul style="list-style-type: none"> - Light grey is not one of our current uniform colours - Jersey material and sweatpant fit lessens formality needed for uniform

Pros:
<ul style="list-style-type: none"> - Unisex fit is inclusive for all genders - Bagginess around crotch helps avoid aspect of body dysphoria
Cons:
<ul style="list-style-type: none"> - Cropped length could look unintentional in a professional setting where trousers are expected to be full length - Pattern may not be cohesive with current uniform

From my research of what was currently on the market I came across the term ‘unisex’ and ‘androgynous’ clothing.

ANDROGYNOUS FASHION

It is important to explore the idea of this garment being **unisex** (meaning it should fit a wide array of body types). **Androgynous** fashion is growing in society as the acceptance of gender diversity becomes normalised.

How do school uniforms fitting all genders lead to this idea of ANDROGYNY?

School uniforms as we know them to be within our school show very standard strong feminine and masculine characteristics, causing some students to feel divided as a result. So what if I design a garment that can be seen both as feminine and masculine? This way, all genders within our school have an option that makes them feel comfortable.

What is androgyny?

As defined by the Oxford Dictionary, androgyny is “having both male and female characteristics; looking neither strongly male nor strongly female.”

Androgyny, once, was an expression of gender. Individuals who identify as androgynous present both feminine and masculine characteristics and tend not to conform to the common genders of male or female. However, as of recently, the term 'androgynous' has gained huge popularity in the fashion world and is often used to describe garments or a type of style.



Who were some of the androgynous fashion icons in history?

Along with Annie Lennox, Boy George, and Conchita Wurst, Grace Jones was one of the most famous iconic androgynous fashion representatives.

Grace Jones began her career of fame as a model in New York from the age of 18. New York fashion is an obvious influence on Jones' style. Bold silhouettes, and the variety of textiles, are very apparent in all of Grace's shoots around this time. Eventually, Grace Jones moved to Paris and began working for Yves St. Laurent. She made an appearance on high-end publications, Elle and Vogue. What made Grace stand out amongst other models was her unique style. Grace has very strong features that present both female and male characteristics. The shoot that gained most recognition was Grace's collaboration with Vogue magazine. She wears a strong shouldered blazer with a plunging neckline, emphasising her long feminine neck. Her hair is buzzed and her strong facial features predominant.

Despite years of controversy, Jones remained confident within herself and the image she presented to society. She had a recognisable impact on many people, including the famous Dolly BingBing who quoted, "She taught me not to be afraid of anything – that life is a stage and the stage is the place for the extravaganza that comes from within".

Overall, Grace Jones taught everyone to know their self-worth, express their identity and to not conform to society's stereotypes.

What can I learn from Grace Jones to help my project?

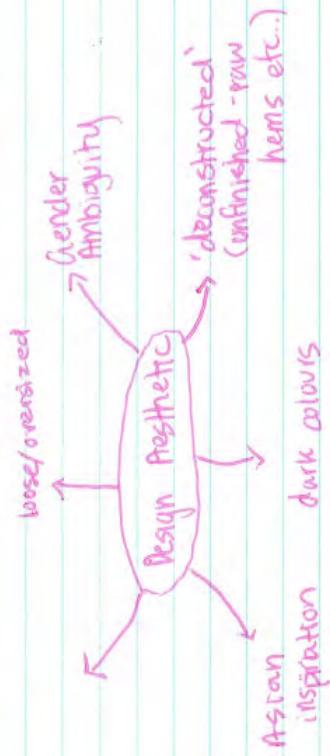
A quote that particularly stood out to me due to its relevance to my topic is, "Hiding secrets, and not being able to be yourself, is one of the worst things ever for a person. It gives you low self-esteem. You never get to reach that peak in your life. You should always be able to be yourself and be proud of yourself." - Grace Jones (Novel: I'll Never Write my Memoirs). This just further adds to what I have learned from students at my school. A huge part of Jones' success was due to her confidence. She expresses that if there were a lack of it, she would not reach her full potential.

Investigating Grace Jones has led me to ask, "who was the most influential androgynous fashion designer? Can I take inspiration from them?"

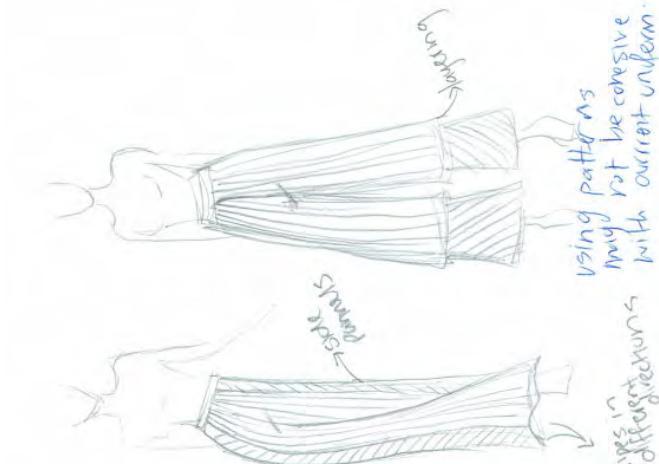
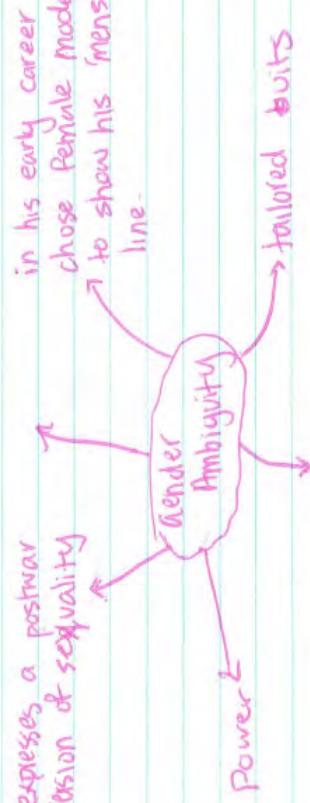
YOHJI YAMAMOTO

→ YOHJI YAMAMOTO

- Tokyo born
 - Mother was a dressmaker by trade
 - Studied fashion design at Bunka Fukusaku Gakuen, Tokyo
 - 1971 - YAMAMOTO's First collection "Bridge"

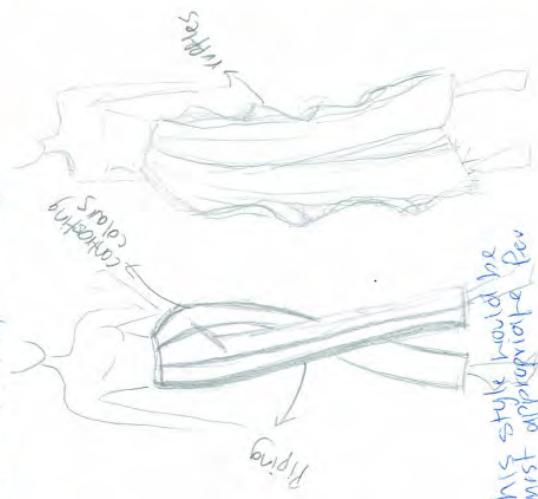


in his early career chose female models to show his 'menswear' line.



using patterns
may not be cohesive
with current uniform.

Yohji's design aesthetic
attract and distract
from gender - presenting
body/gender dysphoria.



This style would be
most appropriate for
a uniform nurse.

Who else shaped the androgynous fashion world as we know it now?

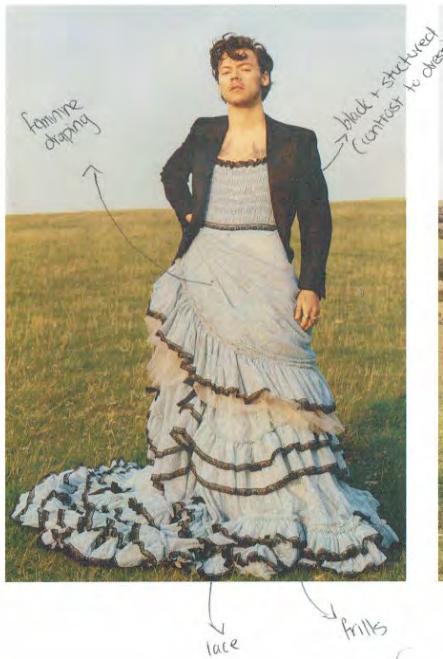
Harry Styles

Billboard chart singer/songwriter, Harry Styles, is recognised not only for his popular music but his impact on the fashion world. Breaking the 'norms', Styles tends to opt for bold outfits which have strong feminine and masculine features.

His appearance on the cover of Vogue in November 2020 had an enormous reaction

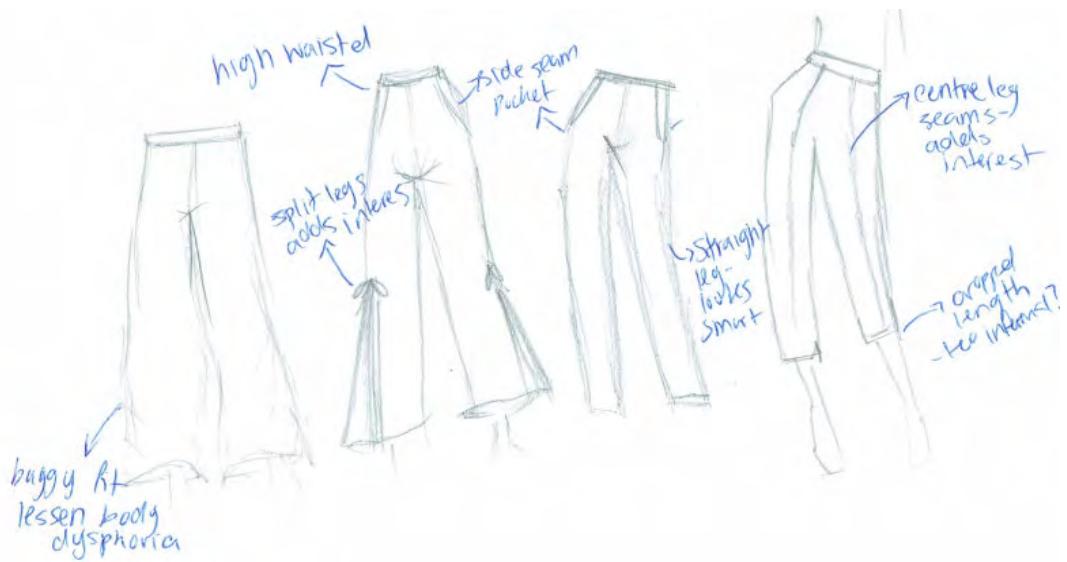
from all. The shoot was commended on its representation of androgynous fashion.

He is particularly popular at the moment with generation Z (1997 - 2012), and therefore would be a suitable person to take inspiration from whilst designing the trousers.



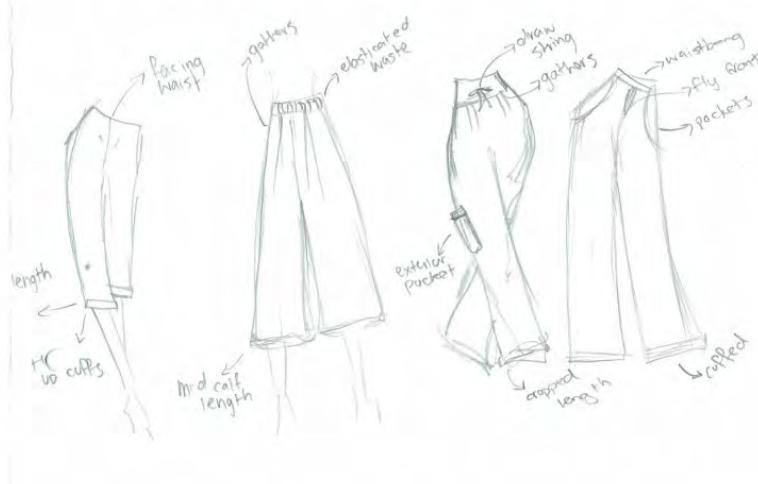
TAKING INSPIRATION FROM HARRY STYLES





My stakeholders really liked the wider fitting trousers as they minimised body dysphoria and would allow for freedom of movement.

From this initial ideation, I looked further into other styles of trousers to see if any features stood out.



From these sketches, we assessed how suitable they would be for our situation - unisex school uniform trousers in a high school environment. We assessed each option against the determined

functional and aesthetic attributes. And decided that I needed to investigate attributes of the trousers more in depth.



My stakeholders and I discussed that the trousers needed some sort of aesthetic feature to create interest and draw attention away from typically gender dysphoria areas. So using my inspiration from Harry Styles and Yohji Yamamoto I decided on the two options - pleats, or centre front seams. The centre front seams were most popular with my stakeholders, saying that "they looked smart and tidy as a school uniform trouser should."

Front Pockets

"allows for easy access to things inside"
"look nice"

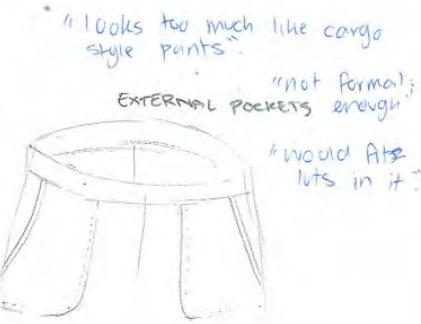


ROUND POCKETS



WELT POCKETS-FRONT
"Looks tidy + professional!"

WELT POCKET-SIDE
"Too discrete
make a Feature of the
Pockets!"



"looks too much like cargo
style pants."
"not formal enough"
EXTERNAL POCKETS

"would fit
lots in it."

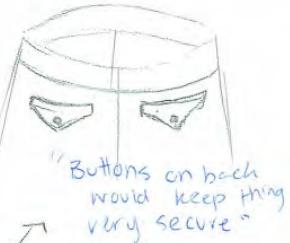
OTHER OPTIONS: Invisible pockets
Side seams

BACK POCKETS

"looks the nicest"



WELT POCKETS
"discreet +
professional!"



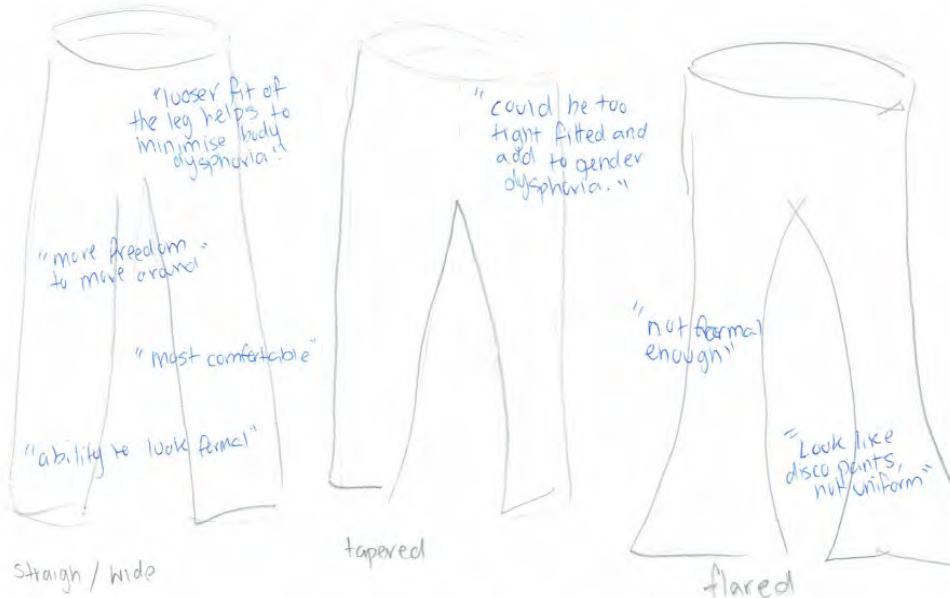
"Buttons on back
would keep thing
very secure"



Exterior
Pocket

"too informal!"

The front pocket that gained most praise was the **round in-seam pocket**, as it can fit a lot of things whilst looking smart/tidy. We decided that a **back welt pocket** would be most suitable for the rear of the trouser, as it's most likely to keep things secure and look polished and discreet.



Straight/wide leg was found to be the most suitable cut as it fits a variety of body shapes and looks the smartest for the school environment. It also allows for a moderate amount of movement as opposed to a skinnier cut.

THE FINAL CONCEPTUAL DESIGN:

Taking into consideration all the attributes chosen by myself and stakeholders, I came up with the following design.

I contacted K█████ our student representative to take it to the board and gain some feedback from the Parent Teacher Association. The overall response was really positive.

K█████ (Student Rep.)

ok so i brought up changes in a board meeting several months ago and was met very positively with the current outcome being the potential for pants next year and a review of the uniform in the near future. there was a lot of demand

Some responses I received from senior management include:

The simplicity of this design means that it will coordinate well with the current uniform "

"I like the functional aspect of having pockets"

"The length is suitable as it is modest and adds to the formality of it"

"I like the centre leg seam feature"

Before rushing into making my design, I first chose to research Kaitiakitanga to ensure that I was approaching this in the most ethical manner.

KAITIAKITANGA

"Kaitiakitanga, meaning stewardship, protection, and preservation, is a way of respecting and caring for the environment, based on a Māori worldview."

<https://tewhariki.tki.org.nz/en/teaching-strategies-and-resources/belonging/sustainability/>

People and nature are connected as a part of the Māori view of the world. Kaitiaki (guardian) cares for the world around us all and ensures the respect for our environment is maintained.

"In the past, people followed traditional practices when they were hunting, fishing, growing or finding food. These helped them to care for the environment." They included:

- temporary bans (rāhui) on taking food from an area
- using the lunar calendar (maramataka) to decide when to plant and harvest
- **taking only what was needed**
- hunting and fishing only for food, not as sport - this could relate to designing for a purpose



Te Orahau Karaitiana

In class last year we had the privilege of talking with Te Orahau Karaitiana who is the owner of the clothing brand 'Matu'. He enlightened us on some sustainable practices he implements within his designs. He uses organic dyeing to colour his garments. One of The Orahau's designs is a zero waste t-shirt which perfectly uses every section of a square piece of material to create no wastage of fabric.

Te Orahau is a prime example of a sustainable designer who embodies the meaning of kaitiakitanga. Te Orahau took inspiration from his Māori ancestors, who used block patterns for all the clothing they made and wore. This meant there was no wastage of materials. Along with this, all the garments made used natural resources such as flax weaving.

How can I display Kaitiakitanga and Innovation in my classroom practise?

Some strategies I could implement include, but are not limited to:

- "Taking only what's needed"

Using my resources efficiently and effectively. This means I only buy what is required and use my equipment and materials considerately.

- **Designing my garment for a purpose**

By specifying attributes I want, I am able to design something I know I will be fit for purpose. To achieve this, I must specify and adhere to key attributes that ensure the garment is suited to both my social and physical environment.

- **Sourcing Sustainable fabrics**

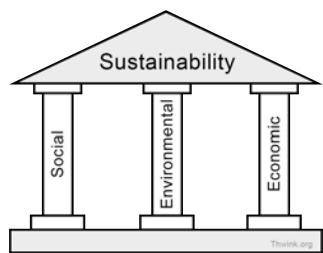
It is important to source sustainable fabric. This could mean getting it from a second hand store, purchasing off cuts that would not otherwise be put to use. Another thing to consider is how environmentally friendly the composition of the material is and how ethically it is produced.

- **Durability/longevity**

To ensure durability and longevity, it is important to select material that will last a long time. Along with that, I should consider finishing all edges with over locking (to eliminate risk of fraying), hem the garment, and add any structure such as interfacing to parts of the garment that are likely to weaken over time (on the waistband for example).

- **Sectional Modelling**

It is necessary to conduct practical modelling throughout my project. To waste as little fabric possible in doing so, I use old sheets for all of my modelling and often opt to model only sections as opposed to full toile.



Kaitiakitanga broadly defined as guardianship, like sustainability, can be represented in three pillars. These being, social, economic, and environmental. If any one of these pillars is weak, all are compromised.

Along with the environmental strategies I have discussed, I will consider economic factors and social factors to ensure the ethicality of my practices. Ethics is very important in a design situation when working with marginalised groups.

PATTERN DRAFTING - E.I.T.

I could have chosen to purchase a commercial pattern to adapt for the purpose of my design, however, instead I decided to draft a pattern myself from scratch. My minimal experience of pattern drafting included a dress pattern I created as a part of my level two NCEA project. Throughout the process last year, I found it allowed me to make adjustments as I went to create the perfect garment for my body type and ensured the originality of my design.

Why is it so important for a design to be original? - NZ COPYRIGHT ACT 1994

I met with Mrs H█████, my business teacher, to gain knowledge of what legalities I may need to consider throughout my project. She first, expressed to me the importance of adhering to the NZ copyright act.

NZ Copyright Act:

This act protects the author's right of intellectual property. It gives the author full ownership of their innovations. For a work or type of material to qualify for copyright protection, 4 conditions must generally be met:

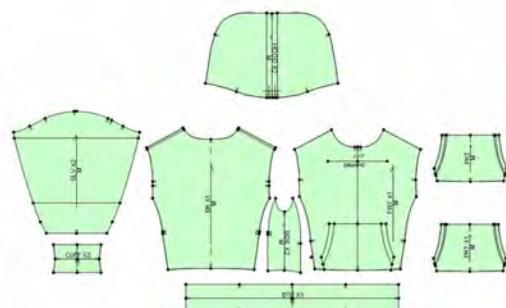


1. It must fall within one of the categories or subject matter in which copyright can exist.
2. **It must be original.**
3. The nationality of the author, or the origin of the work, must be one that qualifies for protection.
4. Certain works must be fixed either in writing or some other material form.

By drafting a pattern from scratch, I ensured that I was not blatantly copying and breaching the ownership of someone else's work. What is pattern drafting?

Pattern drafting is a practice used to draft patterns from scratch. Most designers have a set of **block patterns** which allow them to create any garment by adapting these blocks. The typical block patterns include:

1. Bodice front
2. Bodice back
3. Sleeve
4. Skirt front
5. Skirt back
6. Trouser front
7. Trouser back



French curve:
allowed me to draw smooth lines that would generally follow the natural shape of a body

Set square:
ensured that the lines that need to be straight/square were

Erasable pen:
easily visible when tracing and could be erased if any mistakes were made

Metre ruler:
Used to measure accurately

I was given an opportunity to attend a pattern drafting course at E.I.T. We worked with teacher, M [REDACTED] D [REDACTED], who taught me how to make a feminine trouser block pattern. Initially, we were introduced to the equipment we would be using to ensure the quality of our work.

Along with these tools, I also used a large light box and pattern drafting paper (more see-through than standard printing paper).

The first step in the pattern drafting process was to determine the measurements I would need to use for my block pattern. After discussion with my peers, we agreed that the most common size within our school was a women's 12, and therefore I used the following measurements:

Waist - 76 cm Low Waist - 86 cm
Hip - 102 cm Waist to knee - 59.5 cm
Waist to floor - 106 cm

Throughout the pattern drafting process, I had to implement my mathematical skills. This posed a challenge to me as I kept losing track of where I was at in my calculations. A strategy I implemented to ensure all of my measurements were correct was to list my calculations and double check everything as I went. I had to take my time and be patient to ensure the highest quality outcome possible.



MOCK UP 1

At the end of the course I had a completed block pattern of a trouser front and trouser back with featuring a dart for shaping. The next step was to assess how it fit a body, so I had to make an initial mock up. In all of my testing, it was important I considered environmental sustainability. To do so, I repurposed an old sheet for the mock-up.



OBSERVATIONS OF MOCK UP:

Stakeholder feedback - “too high rise” “quite loose, good for insecurities” “looseness could look a bit informal”

Overall, the issues we observed in these trousers were the ill-fitting area between the crotch and waistband (too high rise) and the looseness, possibly looking a bit informal. But on a positive note, they are fairly comfortable.

NEXT STEP?: To correct the depth of the crotch, Miss P █████ suggested to me to draft a male trouser to compare the shapes. So, I did so, implementing my new-found skill in pattern drafting and a step by step by “Metric Pattern Cutting - Winifred Aldrich”. I used similar measurements as before (adjusted slightly more toward a masculine figure).

MOCK UP 2

MEASUREMENTS:

Low waist 86 cm

Hip 102 cm

Waist to hip 21 cm

Waist to floor 95 cm

Body rise 29.4 cm



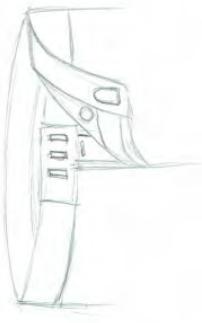
As this trouser is more suited for a masculine figure, when worn by someone who has waist definition, gapping in the waist region can be observed. This is something that needed to be corrected in my adaptations. With this adaptation in mind, my stakeholders and I agreed that this trouser fit a lot better than the previous and had the exact shape we desired. “More formal fit” “style is more suited to uniform” “perfect shape”.

ADJUSTABLE OPENINGS/WAISTBANDS

The school uniform at my school must be worn from year 9 right through until year 12. Over this time, bodies change and people tend to grow out of the size they purchased at the beginning of high school. This means that garments are having to be replaced even if they are still in good condition, promoting overconsumption. To increase the **longevity** of the trouser, I considered it an important attribute to have an adjustable waist.

Not only this, but as we are catering for both masculine and feminine figures, an adjustable waist will mean that those with more hip to waist definition can adjust the waistband accordingly. Overall, this adds to the fitness for the purpose of the garment.

- Adjustable Openings -



P) can be easily implemented into
P) a standard fly front

M) - could create bulk in front
M) when adjusted
- doesn't give much adjustment

Elasticic



P) easy to adjust

M) - elastic over time can become
- elastic over time can become
- brittle and loses its
- long-term elasticity

P) an side seam so doesn't
P) draw too much attention
- looks tidy / formal

M) - would make it
difficult to have
in-seam pockets?

T) could have this opening
on both side seams
to create symmetry
and maximize adjustability

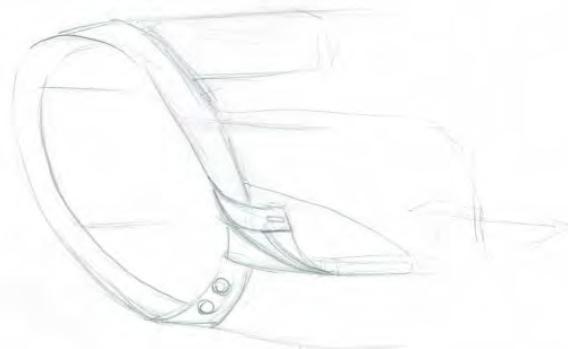
I) - elasticated back panel?
I) look too informal?

P) Discrete, parallel holes

Elastic

M) will need to find a really
discreet elastic to ensure longevity
without compromised
comfort

T) I wonder if I could make
this work for different
pocket styles

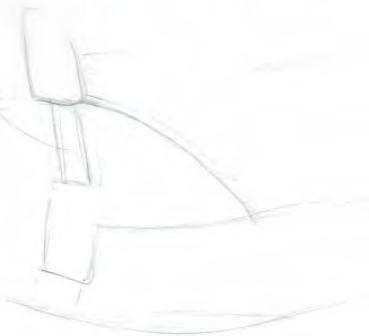


P) could look quite nice with
current uniform silver
metallic buckles/match
buckles on blazer.

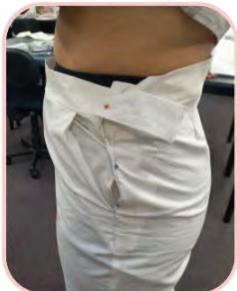


M) - may not 'match' with
existing everyday
uniform - introducing
a new material (metal)

P) could have buckle on
one or both sides.



WAISTBAND TESTING



Initially I tested this waistband which had two side openings. The idea was that it could be tightened by pulling the tabs of the waistband further around your body and then fastened. The concept sounded ideal but the execution proved this waistband to be ineffective as it caused a lot of unwanted gapping and interfered with the appearance and functionality of the side seam pockets.

From my research and ideation, my

stakeholders and I agreed that we still wanted to avoid any centre front opening as this could add unwanted shaping/bulk to this unisex garment. We therefore decided that the next most suitable option would be to investigate using elastic.

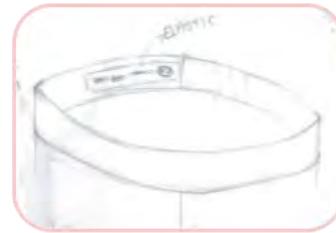
It was feared that gathering caused by the elastic may result in the trouser appearing less formal. To avoid this, I tried a waistband only having elastic in the back to ensure the front still had a polished finish.

Interfacing:

It is important to include interfacing on areas of a garment that the most 'wear and tear' is expected. On trousers, this would include the waistband. It adds to the longevity and therefore sustainability of the garment. I tested three different types of interfacing to determine the most suitable option.

Observations:

The iron on interfacings were the easiest and most efficient to adhere. The order of the interfacing, on the right, shows the least crinkly to most crinkly when scrunched. The non woven iron on interfacing is my preference as it is very easy to adhere and holds its shape well.



Zippers:



Centred zipper:

This method required me to be very meticulous and patient, as I do not enjoy hand stitching. Although it paid off as my zipper is sewn well. But the fabric overlaps the zipper teeth, which is something I could work on if I were to do a centred zipper. I do not like how this zipper is visible though.



Lapped zipper:

The lapped zipper is much more time efficient to do, as it requires a lot less concentration for the same precise result. To ensure a good result every time, I have learnt that it is important to baste stitch so that the fabric doesn't slide when sewing with the machine. The overall aesthetic of this zipper however is compromised, as it is visible.



Invisible zipper:

Overall, invisible zippers are easy and efficient to sew in. Although, I did come across a few struggles when sewing the bottom part of the fabric below the zip. To improve how this looks, next time I will iron it so that it lays flat. This is my chosen method of applying zips as it is invisible and creates a professional formal finish.

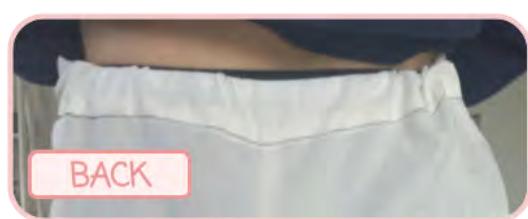
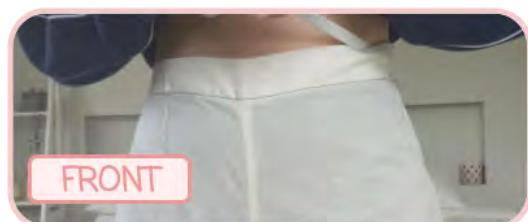
Implementing my chosen techniques, using iron on interfacing, and an invisible zipper, I conducted a sectional mock up of my new waistband.

Plus, Minus Interesting:

P) Looks formal and polished from the front. It is really adjustable and can fit a variety of shapes/sizes.

M) Inclusion of zipper means having to sacrifice one side seam pocket.

I) Placement of the buttonhole on the inside of the waistband did not allow for enough room for the button next to it.



To get these trousers on with only elastic at the back, I had to incorporate another opening, or increase the width at the back. However, doing this would create an even more gathered look adding to the informality I am trying to avoid, and therefore chose the prior option which was to add an invisible zip into the side seam. If I were to do a side seam pocket, there would be too much bulk and the zip would not function with ease. This was a sacrifice/compromise we had to consider. I consulted my stakeholders to get their feedback -

"One side seam pocket and two large welt pockets in the back is enough of an improvement from the singular pocket we currently have in the 'girls' uniform. Therefore, I believe it is a worthwhile compromise to do a zipper and sacrifice a fourth pocket".



Tips to ensure success when sewing waistband:

- Interface on button half of waistband to add stability particularly around button hole
- Iron with highest temperature setting and steam to ensure the crispest lines possible (use protected fabric over stop so that waistband does not burn/melt)
- Tack elastic in place prior to folding waistband over
- Stitch in the ditch to complete. This creates a professional finish and helps the waistband hold its shape.

A [redacted] Uniform shop manager

"This waistband allows for anyone to adjust the size to their liking. Because of this, people will not have to re-purchase garments as often as I observe in the uniform shop currently. I wish all of the bottom-half garments in the uniform shop had this aspect! Having the elastic only at the back means that the formality in the front remains."

Student

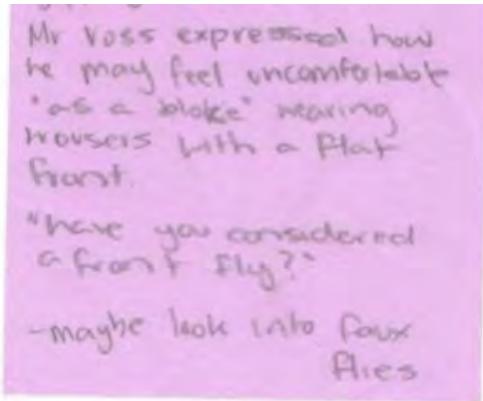
"As someone who was assigned female at birth I feel I have to wear the skirt as it fits my figure more than the 'boys' shorts to school despite that not aligning with my gender identity. Having this option to adjust the waist would make me more comfortable in wearing trousers as I can fit it to my figure."

[redacted] (hard materials teacher)

"I appreciate the adjustability of the waist but feel it fitting most it still does not fully cater to a variety of body types. Personally I would still feel insecure about my crotch area."

FAUX FLY

A faux fly could act to distract from the crotch area and would be a suitable attribute for a unisex trouser as agreed on by my stakeholders.



“ Needs faux fly or other feature to distract from crotch region ”

What do I set out to achieve in this sectional modelling?

In modelling a faux fly, I hope to learn how to sew one, as I have never done so before. It will also

help me to analyse the aesthetics of it and whether any further adaptations will need to be made.

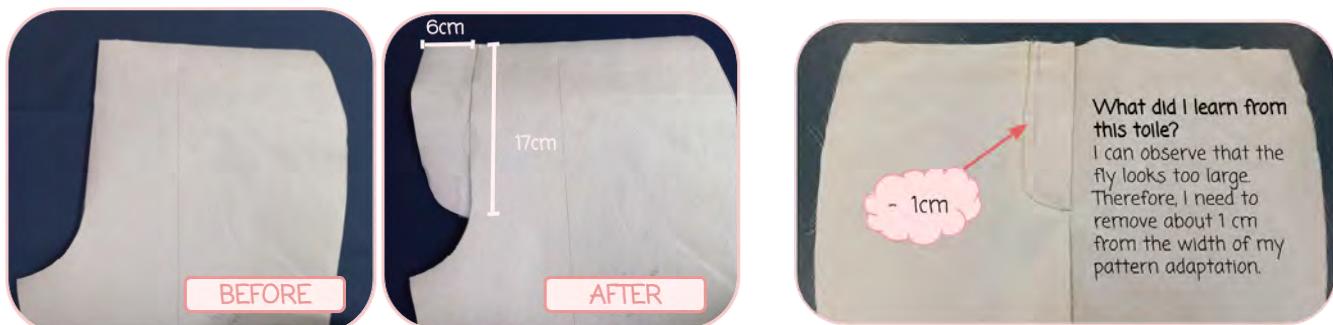
I used this video to learn how to draft a faux fly into my pattern and how to sew it.

How to Sew a Faux Fly | Sewing Tutorial
3.3K views • 11 months ago
Sewway
This shows how to sew the faux fly in the kids pant or girls skirt. This method you can use to make the mens or womens pyjama ...

From this video, I took note of the following tips:

- Make sure to iron as you go
- Mark notches accurately
- Use a double stitch top stitching to create a more ‘professional’ look

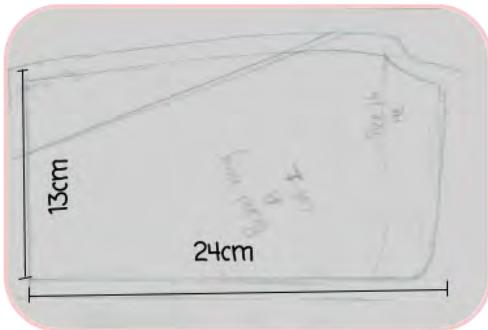
To draft the faux fly onto my pattern, I used a french curve to create an addition that extended 6 cm from the centre front of the trouser pattern and down 17 cm in the crotch



SIDE SEAM POCKET



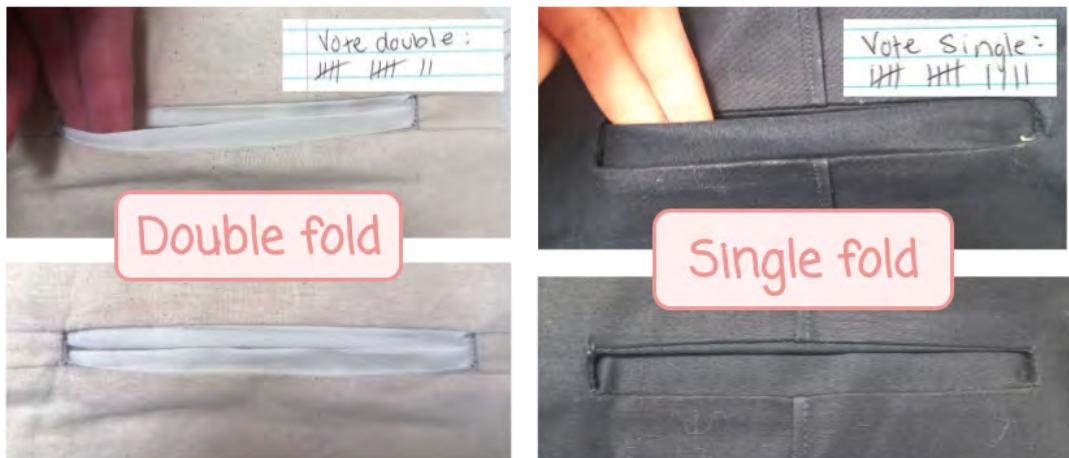
FIT FOR PURPOSE: My stakeholders and I decided that pockets were of huge importance in these trousers. Things students may want to store in their pockets include their phone, or stationary. To make these items easily accessible within the pocket, we ensured it fit a hand.



BACK WELT POCKETS

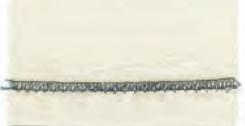


The largest item that will need to be stored in the back pocket is a phone, therefore I sized the pocket to fit a phone.



WHAT DID I LEARN FROM THIS MODELLING?

The thickness of the fabric meant I was unable to get a crisp iron on the double fold. The single fold produced a much cleaner look and gained the most votes when I asked my peers.

FRONT	BACK	NOTES
		<p>BLIND HEM:</p> <ul style="list-style-type: none"> - With a matching thread would look invisible from the front (very professional) - Looks the messiest from the back - Difficult to achieve a fully invisible effect
		<p>SINGLE FOLD</p> <ul style="list-style-type: none"> - Could turn hem stitching into a feature using a double stitch - Looks neat enough from the back - Would be easiest to let down/take up if a different length was required
		<p>DOUBLE FOLD:</p> <ul style="list-style-type: none"> - Could turn hem stitching into a feature using a double stitch - Very neat/professional looking from back - Would be reasonably easy to let down/take up if required

CHOOSING FABRIC

My fabric research initially began with a consultation with A [REDACTED] W [REDACTED], manager of the school's uniform shop, 'Threads.' A [REDACTED] deals with a lot of the feedback received from customers. Apparently a surprising number of people have informed her of their wool allergies, so I must rule this out for any fabric considerations I make. Other than this, she also reiterated the importance of the durability of the material (as I have already specified in my attributes).

Which of my attributes apply to fabric selection?

- AESTHETICS
 - "Plain"
 - "Even-coloured"
 - Cohesive with current uniform

- FUNCTION
 - Washable
 - Durable
 - Comfortable/Moveable
 - Sustainable

SYNTHETIC VS NATURAL FIBRES

What is a synthetic fibre?

Synthetic fibres are man made using chemical synthesis. Advantages to using synthetic fibres include affordability, and they tend to be more durable than naturally occurring fibres. However, they are not sustainable/environmentally friendly. Fabrics such as

nylon fabric take **30 to 40 years** to decompose, and lycra can take up to 500+ years to decompose!

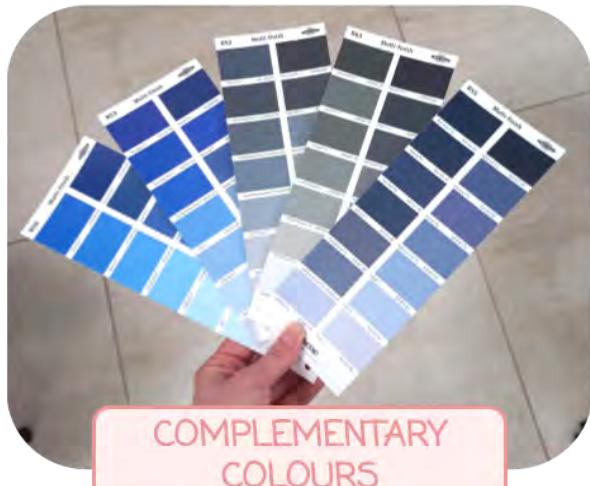
<https://twinenviro.com/2019/10/11/how-long-does-it-take-to-decompose/#:~:text=Synthetic%20fibers%20take%20a%20lot,take%205,00%2B%20years%20to%20decompose>.

What is a natural fibre?

Natural fibres, as suggested by their name, come from naturally occurring materials such as cotton which comes from the cotton plant, linen (from flax), wool/merino (sheep or alpaca), and silk which is produced by the silkworm. Typically, these are more sustainable as they are naturally derived and take a lot less time to decompose than synthetic fibres. Cotton can take as little as one week to decompose if composted correctly. However, an environmental compromise to this is that the cotton plant requires high amounts of water to produce.

From this research I determined that I would like to look into natural fibres as I felt this had less environmental impact than synthetic fibres.

INVESTIGATING COLOUR



The world is a
line print is
uch us about
texture. Look
t like Aubrey
black and white
ver the world of
to understand
o think 'colour'
and explore a
heighten our

Tone and contrast indicate the lightness or darkness of a colour, e.g. yellow is a lighter tone than blue or red, but primary blue is darker than both. The greater the contrast in tone when colours are put together, the more attention they will attract.

Simultaneous contrast is a term derived by Eugene Chevreul, a nineteenth century French dye master. He discovered that colours appear to vary according to their size and relationship to the surrounding colour.

Temperature refers to the apparent warmth or coldness of a colour, e.g. reds appear warm and blues appear cold. Also, some colours have more energy and power to attract whilst others are quiet and retiring, e.g. reds come forward, blues recede. (See colour energy, page 33.)

Primary colours are those usually associated with emotion, and they can vary. White is often seen in Britain, while black is often seen in America.

'Colour Calligraphy by
David Graham



I went to the paint section in Mitre 10 to find swatches of colour. The colour swatch sheets are always displayed in complementary colours. I gathered a few samples that matched our current uniform to inspire a potential colour for the trouser. After discussing with A [REDACTED] W [REDACTED] (manager of uniform shop) she stressed the importance of having a dark colour to avoid visible stains. This minimised my options to navy or charcoal - which is the current colour of our existing skirt, shorts, and trousers. To ultimately decide

the most suitable option, I put out a poll to my group of 50 students to inform me on which colour was most preferred.



My next step was to then reach out to a fabric supplier, in which I chose The Fabric Store who are reliable, helpful, and have a large selection of high quality fabrics.



A [REDACTED] sent me a variety of fabrics to choose from. I received:

- compact stretch suiting (96% cotton, 4% elastane),
- stretch drill (42% cotton, 53% viscose)
- 100% linen,
- a 98% cotton, 2% elastane,
- a 98% cotton, 2% lycra,
- and finally, a 65% polyester, 35% cotton blend.

I tested these fabrics on the following qualities:

- Aesthetic/physical appearance - Was the colour suited? Did it show any lint? Did it have a particular pattern?
- Durability
I conducted this test by rubbing sandpaper over it 20 times to mimic 'wear and tear'
- Crease test/recovery
I scrunched the fabric up as tight as I could and then assessed how well it recovered. Did it crease easily?
- Moveability/recovery
I stretched each sample in four directions to observe how well it moved. I then assessed whether it recovered from stretching or whether it warped.
- Washability
The fabric samples went through a standard family cold wash using mild detergent. I assessed how the fabric looked and felt after the wash. Did it shrink? Did it pill?
- Overall review
I rated each fabric out of ten in terms of its fitness for purpose.

Aesthetics / Physical appearance	Durability (20 washes of wash + wear)	Crease Test + Recovery (crumple fabric)	Movability/recovery (stretch & wrinkle)	Washability (family cold wash + detergent)	Overall review (fit for purpose?)
<p>Colour: dark blue matches uniform weight: medium weight with stretch comfort fabric durability: overall very good</p>	<ul style="list-style-type: none"> - Freyng - Pilling / Milling (really harsh) 	<ul style="list-style-type: none"> - minor creasing 	<ul style="list-style-type: none"> - very stretching = irreversible - no obvious damage 	<ul style="list-style-type: none"> No duras shrinkage return to natural form well no fading minimal effect 	Compact stretch suiting 96% cotton 4% elastane L1: elastic
<p>Colour: navy blue - shows fluff - mild weight: medium moderate stretch</p>	<ul style="list-style-type: none"> - minor pilling (causes fluffiness) - Freyng around edges overall fairly durable 	<ul style="list-style-type: none"> - very minor creasing - good recovery 	<ul style="list-style-type: none"> - very minor wrinkling - stretchy = very irreversible 	<ul style="list-style-type: none"> viscose causes shrinkage. 	8/10 Stretch Drill 42% cotton 53% viscose 3% elastane 131cm
<p>Colour: white</p>	<ul style="list-style-type: none"> - Pilling - mild off colouration - Freyng - minor holes not durable 	<ul style="list-style-type: none"> - creases very easily - does not recover well 	<ul style="list-style-type: none"> - minor wrinkling - more visible 	<ul style="list-style-type: none"> Causes lots of wrinkles. requires ironing to achieve original form 	5/10 100% linen 140cm width
<p>Colour: grey with current uniform but shows fluff easily weight: medium weight - transseasonal</p>	<ul style="list-style-type: none"> - Mild discoloration - mild "fluffing" 	<ul style="list-style-type: none"> - visible creasing - mild recovery 	<ul style="list-style-type: none"> - very little stretch - good recovery no obvious damage 	<ul style="list-style-type: none"> wraps well shows lint from other garments 	7.5/10 48% cotton 21% recycled elastane 139cm
<p>Colour: grey above (shows fluff) weight: medium soft (nice to touch on skin)</p>	<ul style="list-style-type: none"> - Freyng - minor fluff/pill 	<ul style="list-style-type: none"> - minor creasing - minor recovery 	<ul style="list-style-type: none"> - moving caused creasing - back recovering - not irreversable (no stretch) 	<ul style="list-style-type: none"> as above 	7/10 98% cotton 137cm
<p>Colour: grey above (shows fluff) weight: medium weight number 2 feels sticky and uncomfortable</p>	<ul style="list-style-type: none"> - fluff - minor Freyng 	<ul style="list-style-type: none"> - minor creasing 	<ul style="list-style-type: none"> - no visible damage - not lot of stretch however. 	<ul style="list-style-type: none"> masks really well no shrinkage, pilling or stretching 	7/10 48% cotton 24% elastane 140cm 65% polyester 35% cotton 158cm

A (uniform shop):

The cotton fabric is durable, holding both shape and retention of fabric due to the stretch in the material, making it ideal for resilience through daily use. Cotton fabric generally eliminates shrinkage, so this is a valuable aspect of the garment as everyone likes easy care fabrics. The addition of the smooth front for

From this testing and feedback from my stakeholders, I determined that the most suitable fabric was the compact stretch suiting, which is composed of 96% cotton and 4% elastane. This fabric had the best recovery in the majority of my testing and was the perfect colour. It's a medium weight fabric that should be suited to both cold and warm weather and allows for comfort, movement and most importantly durability.

LEGALITIES - CARE LABELLING

<https://comcom.govt.nz/business/your-obligations-as-a-business/consumer-information-standards/care-labelling>

The **Consumer Information Standard Regulations 2000** state that “New clothing, household fabrics and furnishings must have a label that gives consumers information about how to care for that type of good.”

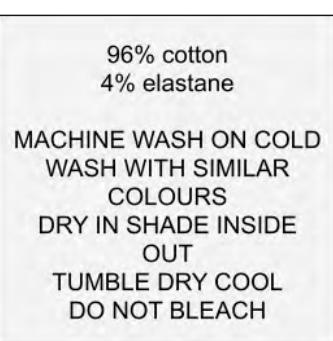
Care labels:

- must be legible and in English
- can use internationally recognised symbols (e.g., for dry-cleaning) to accompany the written instructions
- must be easy to find by consumers examining the good before buying
- If the good requires a permanent label, the label must be able to withstand the care treatment the item requires and should remain readable and attached through the good's useful life.
- Should be on each item of a set (e.g., a suit)

The label should include:

- general cleaning and care instructions
- where appropriate and necessary, textile maintenance (e.g., air regularly)
- Any warnings against inappropriate treatment (e.g., do not tumble dry).

These are some of the care labels I found in items within my own wardrobe.



IN A BROADER SENSE: Being a uniform garment, this trouser would become commercialised and therefore must follow any consumer/fair trading acts. To ensure this I would need to include a care label, which for my chosen fabric would look something like this. This label explains to the consumer how to care for the trousers and increase longevity.

Now that I had chosen a fabric, it was important to test how to work with it. Which seams work best? Tension? Stitch length?

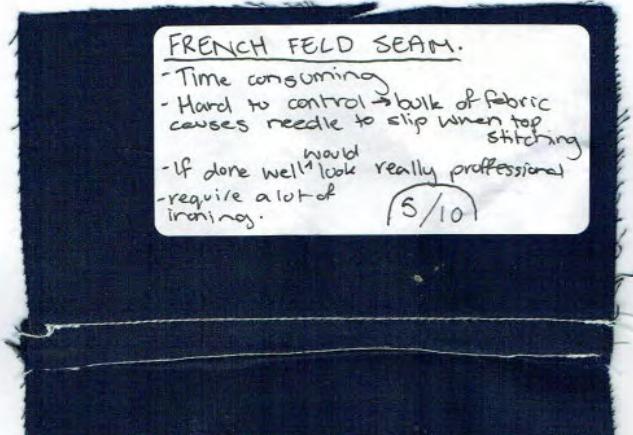
TESTING SEAMS + STITCH LENGTH/TENSION



TENSION

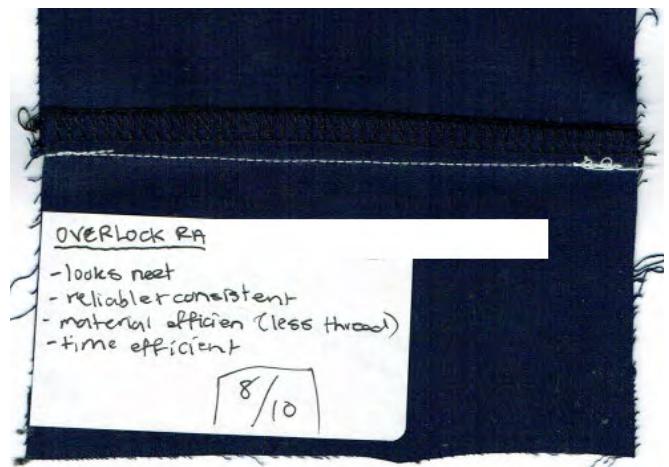
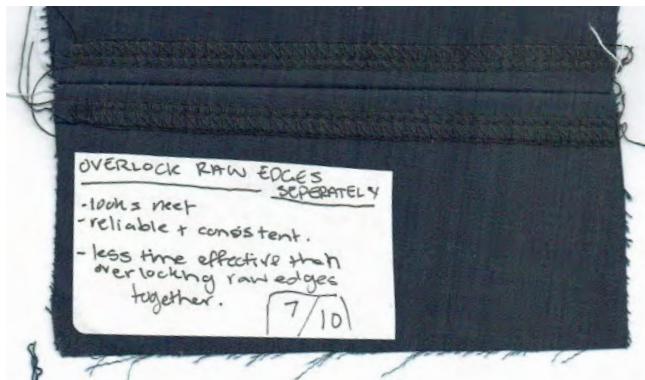


STITCH LENGTH



1 - too lose: causes bubbling of thread
3 - alright
5 - alright
7 - good
9 - too tight: causes puckering

2.2 - too small: makes it difficult to unpick when mistakes are made
2.6 - perfect
3.0 - too large: decreases durability of seam



From this testing, I decided to finish my seams by over locking the raw edges together. This saves time whilst still creating a tidy and durable finish. I determined that to achieve the best seam, I needed to have my machine set at a tension of 7 and a stitch length of 2.6.

CODES OF PRACTICE

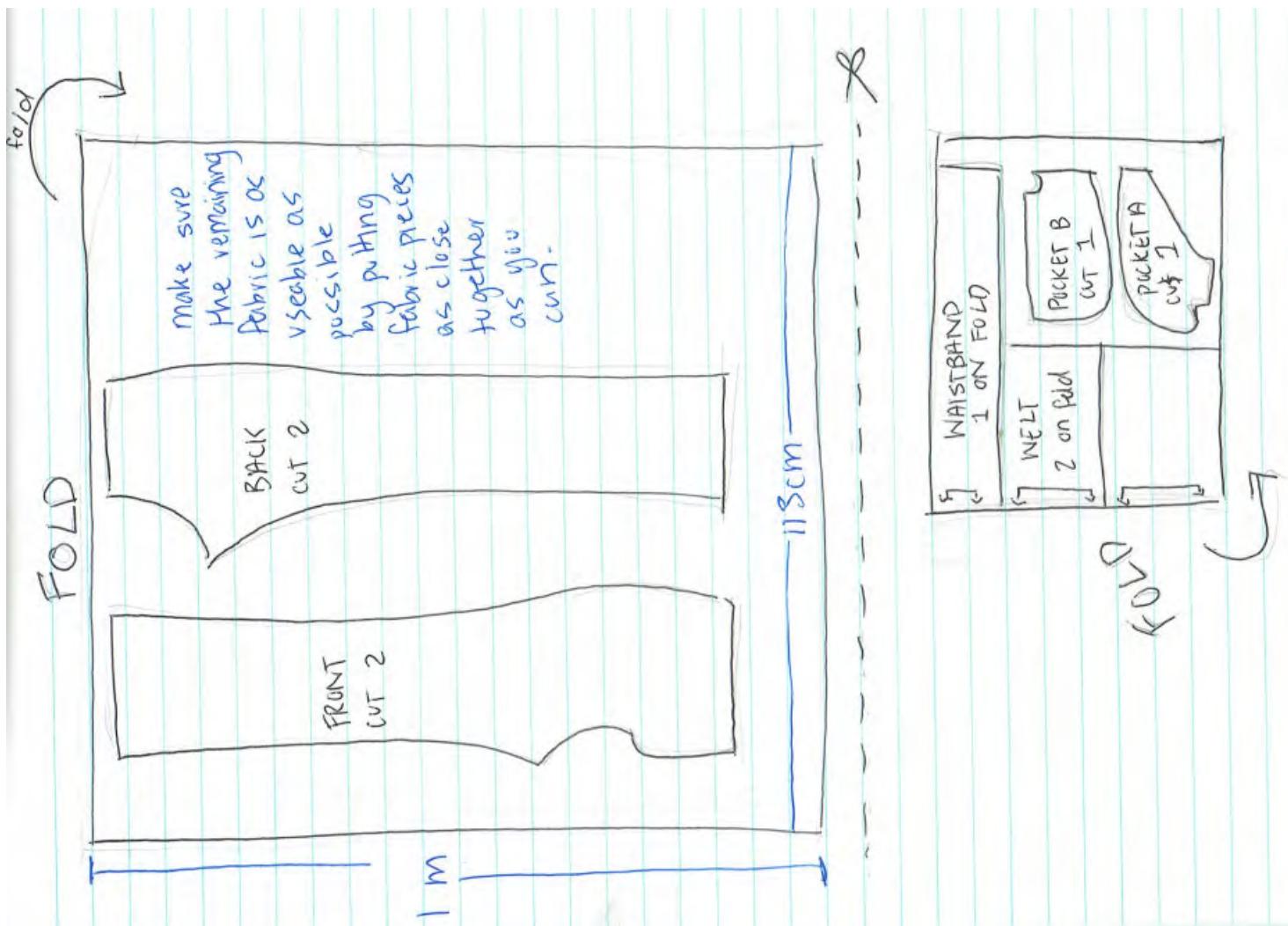
Tool/Purpose	Risk	How do I manage this risk?
Janome sewing machine: This machine has various settings for me to use and will achieve things such as simple seams as well as buttonholes. I chose to use stitch length 2.6 and tension of 7 to achieve the best results for my fabric. To care for this piece of equipment, it needs to be cleaned regularly and make sure maintenance is kept up to date.	Needle, feed dog catching hair	Keep fingers away from needles. Always tie hair out of the way.
Overlocker: To get the most accurate sewing on this machine I must maintain a reasonable speed - this means not going too fast. I must keep this machine clean and ensure upkeep of maintenance also. Overlocking seams adds to the durability and longevity of the garment.	Needle, additional moving parts +	Keep fingers away from needles. Always tie hair out of the way.
Fabric shears: Fabric shears allow me to cut my fabric accurately and efficiently. To get the best use of this tool, I must stand when cutting and ensure they are sharp.	Incision, puncturing, or slicing of skin.	Walk (don't run) when holding scissors. Grasp at the shut blade end when transporting the scissors or passing them to someone.
Iron: For my fabric the iron worked best at the hottest setting. I used steam to ensure crisp seams and folds where necessary.	Burns to skin, fabric, or ironing board. Risk of fire.	Keep fingers away from the hot plate. Always set down on surfaces vertically when not using the iron and turn off after use.
Pins: I used ball point pins as this was what was available to me in class. They had a plastic ball point head which allowed for easy use and they were strong enough to go through my fabric with ease.	Punctures	Be cautious of yours and others fingers. In some cases a thimble may be necessary (e.g. when hand sewing).
Other risks I will need to consider are: Not putting things away properly (e.g. cords, equipment, etc...)	Losing things, Could become a tripping hazard if on the floor and therefore cause injury.	Put things away/out of the way after use in their correct places, with cords etc tucked back.
And sitting at computers and machines for a long period of time	Bad posture - aches and pains from not moving about.	Get up and move every now and again + focus on good posture.

EXAMPLES OF MANAGING RISKS:

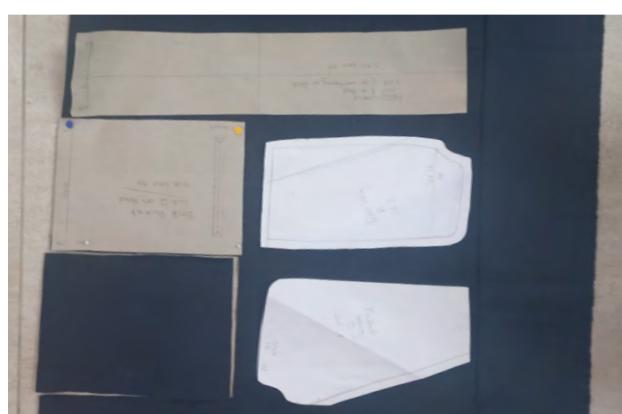


My fabric had arrived, and it was time to begin the manufacturing process. The first step in making any garment is to prep all the pattern pieces, and these trousers were no exception. A fabric layout plan that economises the fabric the best is hugely important, as it minimises fabric wastage and adds to the overall environmental sustainability. I had to ensure that all pattern pieces were cut correctly/accurately and that no mistakes were made. These are the cutting instructions I had to use when planning my fabric layout:

Pattern Piece	Cutting Instructions
Front leg	Cut 2
Back leg	Cut 2
Welt pocket	Cut 2 on fold
Pocket bag A	Cut 1
Pocket bag B	Cut 1
Waistband	Cut 1 on fold



From this layout plan I determined that I needed to purchase 2.2m x 1.13m of this fabric. This cost me around \$50 including a %15 student discount.



BRIEF MANUFACTURING PLAN:

1. Sew seams down centre of legs
2. Attach side seam pocket to front right leg
3. Sew welt pockets into the back leg pieces
4. Pin left front to back right side together and sew along inner and outer leg seams
5. Pin right leg front and back and sew along inside leg seam only
6. Flip legs inside out and pin crotch seams together. Sew.
7. Attach waistband
8. Insert invisible zipper along left leg and finish the seam
9. Finish waistband
10. Sew hem



PROTOTYPE- THE FINAL TROUSERS



SPECIFICATION/ ATTRIBUTE	HOW I ACHIEVED THIS/FITNESS FOR PURPOSE
Modest	The trousers have sensible coverage and no inappropriate slogans or symbols.
'Plain'	They are 'plain' (as specified by the dress code). They do not have any pattern, fraying etc. to draw unwanted attention.
'Even-coloured'	The trousers are an even-toned dark navy blue.
Cohesive with current uniform	The formal appearance in conjunction with the colour, and fit of these trousers means they are cohesive with the current uniform.
Comfortable/ Moveable	Being trousers, they allow for more freedom of movement than the skirt of the current uniform. And the fabric I chose has stretch in it which adds to the comfort/movement.
Sustainable	I achieved sustainability by choosing a fabric composed of 96% cotton (natural fibre), and 4% elastane. I economised it throughout the manufacturing process and ensured my decisions throughout were backed by trial and research. I also chose to do sectional modelling as opposed to full toile for all of my testing to minimise the amount of fabric I used. A care label also shows the consumer how to care for this garment. A more in depth analysis of sustainability can be viewed below in the life cycle analysis of the trousers I have produced.
Trans-seasonal	In the selection of my fabric I made sure that the weight of the material was not too thick or too thin, meaning it should be able to be worn comfortably year round. However, upon producing the final trousers, I found that the fabric leans more toward a heavy weight and is therefore suited towards cooler weather.
Durable	This also came down to my fabric selection. After in depth testing, I determined that my chosen fabric was one of the most durable of the options. I also ensured I produced my final garment with additional durability, including interfacing and over locking raw edges to prevent fraying. This adds to the longevity and therefore sustainability of the finished trousers.
Washable in a family cold wash	When fabric testing I observed no obvious effect to the fabric when put through a standard family cold wash.
Fit a variety of body types:	To ensure that all genders and body types felt most comfortable in these trousers they had to fit well and adapt

Waistband with elastic and an invisible zipper	with individual's bodies over time. The trousers have an adjustable elastic waistband at the back with an invisible zipper. This allows them to easily be pulled on and tightened to preference. The inclusion of the zippers, however, meant that we had to compromise and sacrifice one of the side seam pockets.
Pockets: front and back	The back of the trousers features two single fold welt pockets. The pockets measure 13 cm by 24 cm and securely hold a phone. The singular pocket in the front has a rounded edge and is sewn into the side seam. The pocket fits a hand (or equivalent to the size) and measures at 22 cm by 16 cm.
Ankle length	The finished trousers measure 95 cm from waist to ankle. However, with the implementation of a blind hem, the length can be easily adjusted to fit most bodies.
Makes people feel comfortable in what they are wearing: Faux fly and centre leg details to distract.	Gender dysphoria was the major issue I set out to minimise. It was important throughout the design process to investigate different features that could distract from typically gender dysphoric areas. To achieve this, I implemented a faux fly to disguise the crotch area, and centre leg seams on the front and back to act as a feature that draws interest to the eye.

To further assess the success of my project, I reached out to a few of my stakeholders to get their responses.

How well do you think I achieved aesthetics attributes for the social environment?

5 responses

Very well

Very well, looks nice - not too fitting - perfect balance between the things we talked abt

It was formal enough for a uniform.

Modest - I think the colour choice and the style and fit of the pants are modest.

Plain - You have achieved this attribute with your fabric choice being one solid colour and the details being simple and effective.

Cohesive - The fabric choice is smart and formal and the style of the pants also formal looking which matches the current school uniform.

These aesthetic attributes meet the needs of the social environment because it does not show anything inappropriate, it is simple and covers the body.

I think you have achieved the goal of providing a gender neutral pair of trousers for a co-educational school environment. They look smart, the cotton fabric has a great texture which is wonderful for the Hawkes Bay weather. They will be serviceable for day to day wear, whilst maintaining a functional purpose.

How well you think I achieved functional attributes for the physical environment?

5 responses

Very well

good - its not fitted, pockets, adjustable waist

Are the pants moveable? Like comfy to be in for a whole day and move from classroom to classroom

Very well

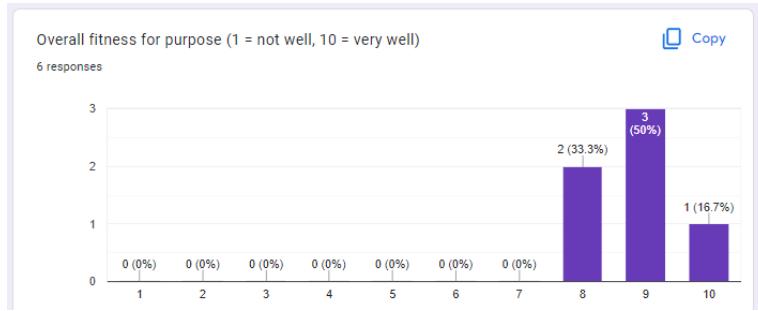
Comfortable/durable - the fabric choice has a smooth finish which will make it comfortable to wear and the thickness and quality of the fabric will help it last a long time. The sewing is also finished to a high standard which will help the pants last a long time.

Trans-season - In the colder weathers I think the pants will help keep the student warm. In the warmer weather, I think the students may get sweaty if outside in the sun for a long time because the fabric is slightly on the thicker side - however, the pants do feel breathable so if there is a slight breeze that will help the student keep cool.

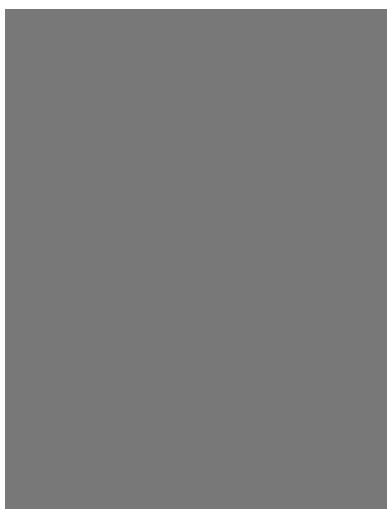
Body types - I think this attribute has been achieved because of the adjustable features and the simple style would suit both female and male body types. Because it was made from combining the male and female pattern and finding a balance - some body types may not feel comfortable in it depending on how they are shaped

The cotton fabric is durable, holding both shape and retention of fabric due to the stretch in the material, making it ideal for resilience through daily use. Cotton fabric generally eliminates shrinkage, so this is a valuable aspect of the garment as everyone likes easy care fabrics. The addition of the smooth front for less bulk and the adjustable half waist enables a good fit for all body types and shapes. The clean lines of the garment suit a school environment, making the garment fit in with the existing uniform style.

I thought that it was a bit strange that there was only one front pocket but then I realized that that may be due to the zipper's positioning but I'd rather have one front pocket than no zipper or a zipper on the back. It was really comfortable to wear and one noticeable difference was that the waistband wasn't cutting into my stomach when I sat down unlike how the skirt's waistband does. Another thing is that the material used would be too hot to wear in the summer. They're probably one of the most comfortable pants I've ever worn and I really like how one pair of pants can fit different people of over a range of sizes. They look really nice as well as having good functionality. I really like the adjustable waistband. I also like how the front pocket blends into the seam and how the zipper has been put on the side and there's no button so it's less noticeable although for some people not having a button there might not be good. Overall I really love these pants and honestly wish they were in our school uniform and they are so much more practical and comfortable than skirts.



TYPICAL DAILY ACTIVITIES OF A STUDENT - UPDATED



Sitting at a desk

Observations:

H [REDACTED] - "When I went to sit down I didn't have to smooth down the back of my skirt so it doesn't scrunch up uncomfortably. It is also a lot more comfortable to sit down in because the waistband doesn't cut into my stomach uncomfortably like the skirt does. Plus no one can see up your skirt because you're wearing pants."

Sitting for lunch

Observations:

H [REDACTED] - "I don't have to worry about smoothing my skirt down or sitting differently in case someone can see my underwear. The waistband also doesn't cut into my stomach when I sit on the ground unlike the skirt. They are really comfortable to sit in."

Walking between classes

Observations:

H [REDACTED] - "I can walk to class without having to twist my skirt back around because it twisted from sitting down and getting up or because it has something in its pocket. I don't even have to think about the pants while I'm wearing them unlike skirts that seem to need constant adjustments."

I feel this garment has been thoroughly thought out, tested on all fabrics samples and been put together with the best material for a fit for purpose garment. Being made by a young person who has had to wear a school uniform designed by adults, this perspective really gives an indepth look into what works for the average school environment, taking into account gender neutral options that aren't currently offered. Well done.

LIFE CYCLE EVALUATION/ END OF LIFE



A life cycle analysis (LCA) is a method commonly used by designers to determine the environmental impacts covering the FIVE stages of a product's life cycle. It helps to assess the sustainability of their products and potentially reveal any weaknesses that may appear along a product's life cycle. This allows the designer to hopefully acknowledge and tend to these weaknesses using innovative ideas to improve on the overall sustainability of their business. The stages are as follows:

1. Resources

In this stage of the life cycle analysis, designers need to assess the sustainability of their resources. Where is it sourced from? How is it being produced? Sustainability in terms of resources could refer to: the material (is it natural? Biodegradable?), the cost (are the seller and producer both benefiting from this?), and whether materials are sourced locally. Sourcing materials from local businesses is important to the economy and supports small brands, who tend to be more sustainable than larger companies.

To ensure my garment was **fit for purpose**, it was important to consider the qualities of my chosen fabric. After in depth research, I decided on using 95% cotton/5% elastane. Cotton is a natural fibre, meaning it decomposes faster than a fabric composed of synthetic fibres. I also used cotton thread and repurposed buttons for my garment. Sourcing my fabric from within New Zealand also meant it required less transport emissions than if I bought it from overseas. This statement is from the Fabric store website.

Supply Chain Transparency

Our mission is to ensure the fabrics and products we offer to the creative community are transparent and ethical. So, where do our fabrics come from? Of the fabrics we purchase, around 85% are sourced as designer deadstock. The remaining 15% of our fabrics are those that we mill exclusively, and these are facilitated under strict code of conduct adherence in collaboration with companies we have trusted, long-standing relationships with. Our aim is to provide transparent information about what we sell, and to educate our community as to the pros and cons for 'deadstock vs new stock', to help us all make informed decisions about our creative endeavours!

2. Product manufacturing

How are the products being produced and by whom? Manufacturing a product can involve many different processes, including (but is not limited to) work from machinery or hands on work from employees. Machinery economises time and tends to manufacture the products to a consistent standard. Businesses that use employees to create their products, open up job opportunities. This affects social sustainability (positive or negative.)

In a broader sense, the garment I designed could be easily translated into a factory produced item. It is not overly complex, therefore could incorporate both hands-on production and machinery contribution to minimise manufacturing time. In the production of my garment, I ensured all materials were used efficiently to minimise wastage and add to the environmental sustainability of the trousers.

3.Distribution

How a product is distributed plays a massive role in the sustainability of a business. This is where many will use excessive packaging such as cardboard, plastic, and bubble wrap (which is not environmentally friendly). This creates a lot of material wastage. Products can be transported by road vehicles, trains, ships, and planes - all of which produce carbon emissions. Cutting down on sizes of boxes and materials used to package items is vital if we want to see a sustainable future for the secondary sector and our planet.

In a broader sense: Considering this is a garment that is likely to be purchased and distributed in bulk, huge considerations would need to go into how this is achieved. This could be something to look into further in the future.

4.Use

This step in the life cycle analysis assesses how the consumer uses the product. It allows the designer to assess the efficiency and longevity of the product. Items such as toasters, cars, and fridges constantly need energy to run. Is the item energy efficient? How durable a product is also affects how sustainable it is. If something lasts for a long time, it does not need to be replaced and therefore promotes less consumption and overproduction.

Supposedly, the durability and longevity of the trousers I designed would last an individual their entire time at high school (four years). After this, I would hope that it could be resold/passed down and continue to be used for additional years. The adjustability of the trousers mean that they will change with the wearer and result in less consumption as the trousers would not need to be replaced.

5.And then finally the end of the product's life

How is the product disposed of? Some products may be repurposed/upcycled or recycled as a sustainable approach to the end of its life. Others may end up in landfill - which is obviously not the desirable outcome. The disposal of the product is one of the steps that produces the most wastage. New innovations from businesses need to be made to promote and support better disposal to consumers.

Aspects of the trousers such as the zipper and button may be reused if not damaged. The fabric of the garment may also be reused to produce something new, however in an instance when this is not possible, the care label on the trousers gives the

recommendation of composting at the end of their life. One of the many advantages of using a natural fibre means it is able to be composted and broken down in most household composting systems. Due to the 5% elastane property of the fabric, it may take multiple years, although, this is a lot better than the expected 100-year plus it would be expected to take to decompose in landfill.

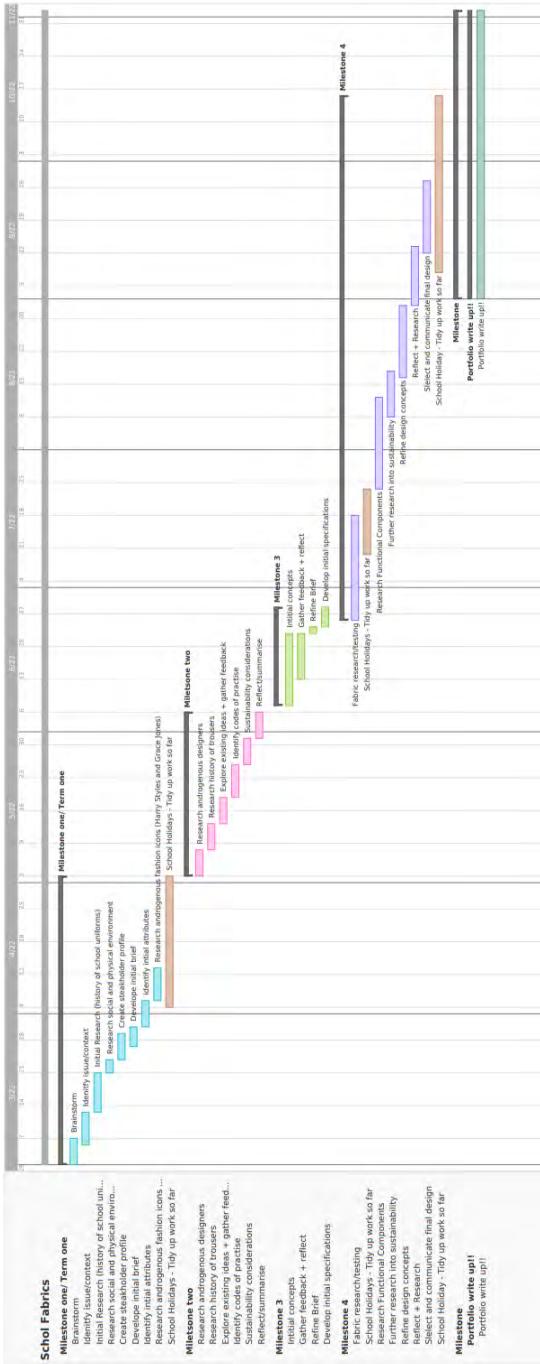
PERSONAL EVALUATION

From my stakeholder feedback and assessment of my specified attributes, it is apparent that my outcome was successful. This can be attributed to my in depth research, testing, and trialling. I believe I was particularly proficient in ensuring the needs of the physical and social environment throughout my project. This is reflected in the high ratings I received from my stakeholder for overall fitness for purpose. Making a prototype allowed me to model a final outcome in the intended environment (high school) and assess how well it met the issue: no option for gender-neutral uniform. The trousers minimise the attention drawn to areas of high gender dysphoria using distractions such as a faux fly and centre leg seams. They also have an adjustable waistband to cater for various bodies/sizes. In a broader sense, if these trousers were to be made for the school uniform, having a selection of sizes in addition to the adjustability that they already have would be a must. This would increase the comfort for an even wider group of students. The pockets are fit for purpose as they are large enough to fit a phone/hand and secure anything you may want to store in there. This catered for the complaint of the current uniform skirt not having any storage. All of this, in conjunction with the previously mentioned attributes, give me confidence in the success of the outcome.

Something I really wanted to ensure throughout this project was to maintain a good relationship with all of my stakeholders. I believe I achieved this by catering my time around when they were free to help me and giving them various options of providing me with feedback. By doing so, I gained valuable feedback that I could apply comprehensively into my designing, and testing of this garment. This shows that I have considered various perspectives to ensure the most suitable design that I could.

What would I change about the trousers?

One of the biggest compromises I made throughout this was losing one of the side seam pockets to allow for an invisible side seam zipper. I determined there would be too much fabric bulk to make this an applicable option. Had I had more time, I would have liked to have investigated alternate options so that the pocket could remain. This may mean having to research discrete exterior pockets, perhaps? Other than this, my stakeholders and I are very pleased with the outcome of these trousers.



How could I have managed my time better?

Throughout this project, time was something I always had to be aware of. With the pending deadlines for other subjects and part-time work outside of school not to mention having to quarantine twice due to covid, it meant I had to prioritise certain things with the time that I had. Planning at the beginning of my project helped me to consider an initial outline of how I was going to go about this project, but upon completing certain tasks out of order I did not always reassess my plan. Had I planned each lesson period day by day I believe I may have been more productive. The Gantt chart on the left is an updated version of the one I made at the start of the project. Some of the tasks took a lot longer than I had anticipated so I found myself completing multiple things at a time. This meant that not everything was completed to the standard I would have liked to have achieved. Despite this I am still fairly satisfied with how I managed my time.

Bibliography

Websites:

- <https://www.bbc.com/culture/article/20200619-why-grace-jones-was-the-most-pioneerin g-queen-of-pop#:~:text=After%20Living%20My%20Life%2C%20Jones,A%20View%20t o%20a%20Kill.>
- <https://www.vogue.com/article/grace-jones-memoir>
- <https://kingandallen.co.uk/journal/2016/a-brief-history-of-trousers/>
- <https://www.oxbowbooks.com/oxbow/blog/2017/08/02/2877/>
- <https://vintagedancer.com/1930s/1930s-pants-trousers-beach-pajamas-history/>
- <https://www.pinterest.nz/pin/200832464606835247/>
- <https://time.com/4363815/history-women-pants-hillary-clinton/>
- https://en.wikipedia.org/wiki/Trousers_as_women%27s_clothing
- <https://www.britannica.com/story/when-did-women-start-wearing-pants#:~:text=In%20th e%20United%20States%2C%20Elizabeth,a%20short%20jacket%20on%20top.>
- https://en.wikipedia.org/wiki/Victorian_dress_reform
- <https://www.purewow.com/fashion/biggest-fashion-trends-of-the-year>
- <https://wearinghistoryblog.com/2014/09/a-primer-1930s-1950s-trousers-pants-for-wome n/>
- https://www.huffpost.com/entry/women-and-pants-fashion-liberation_1_5c7ec7f7e4b0e6 2f69e729ec
- <https://bi.org/en/famous/grace-jones>
- <https://www.amazon.ae/Mr-Scissors-Premium-Scissor-Utility/dp/B086RV7LQ2>
- <https://www.sewit.co.nz/collections/christmas-gift-ideas/products/brother-extra-tough-fs6 0x-sewing-machine>
- <https://www.easyposturebrands.com/blogs/articles-1/posture-when-sitting-7-tips-to-fix-b ad-posture>
- https://www.philips.co.nz/c-p/GC2145_29/easyspeed-plus-steam-iron
- <https://www.copyright.co.nz/understanding-copyright/what-is-copyright#:~:text=It%20giv es%20the%20person%20who,their%20work%20will%20be%20used.>