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Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

## **Level 1 Materials and Processing Technology RAS 2023**

**92014 Demonstrate understanding of sustainable  
practices in the development of a Materials and  
Processing Technology design**

# **EXEMPLAR**

**Merit**

**TOTAL 06**

To be completed by candidate:

**NSN**

**School Code**



**Mana Tohu Mātauranga o Aotearoa**  
New Zealand Qualifications Authority

**Level 1 Materials and Processing Technology RAS 2023**  
**92014 Demonstrate understanding of sustainable practices in the development of a Materials and Processing Technology design**

Credits: Four

**PILOT ASSESSMENT**

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of sustainable practices in the development of a Materials and Processing Technology design.	Refine sustainable practices in the development of a Materials and Processing Technology design.	Evaluate sustainable practices in the development of a Materials and Processing Technology design.

Enter your 9-digit National Student Number (NSN) and School Code into the space at the top of slide 1. (If your NSN has 10 digits, omit the leading zero.)

**Answer ALL parts of the assessment task in this document.**

Your answers should be presented in Verdana font within the text boxes. You may include only information you produce during this assessment session. Internet access is not permitted.

Save your finished work using the following naming convention: **SchoolCode-YourNSN-92014.pptx**.  
If you submit your report orally, embed the single file into this document.

If you open this document using software other than PowerPoint:

- save your slideshow as a PDF, using **SchoolCode-YourNSN-92014.pdf**
- if submitting oral responses with a PDF report, submit a separate file for the audio, using **SchoolCode-YourNSN-92014.mp3 or wma**

By saving your work at the end of the assessment session, you are declaring that this work is your own. NZQA may sample your work to ensure this is the case.

**INSTRUCTIONS**

Respond to the following task about how you **applied sustainable practices** in the development of a design.

You may support your answers with images, which can be inserted into the report where image boxes have been provided.  
*Do not use video files.*

You should aim to write no more than **800 words** in total. Where audio evidence is used, the total duration should not exceed **4 minutes**.

## (a) Your design – what it is

(i) Who is your design for (i.e. person, whānau, or community)?

My design of pyjama pants is for my own use to achieve comfort and a way of expressing my identity. I used my design while wearing it throughout my Wellington trip while matching with my friends. I will further use my design in the upcoming study leave and to wear while relaxing.

(ii) What are the specifications of the design?

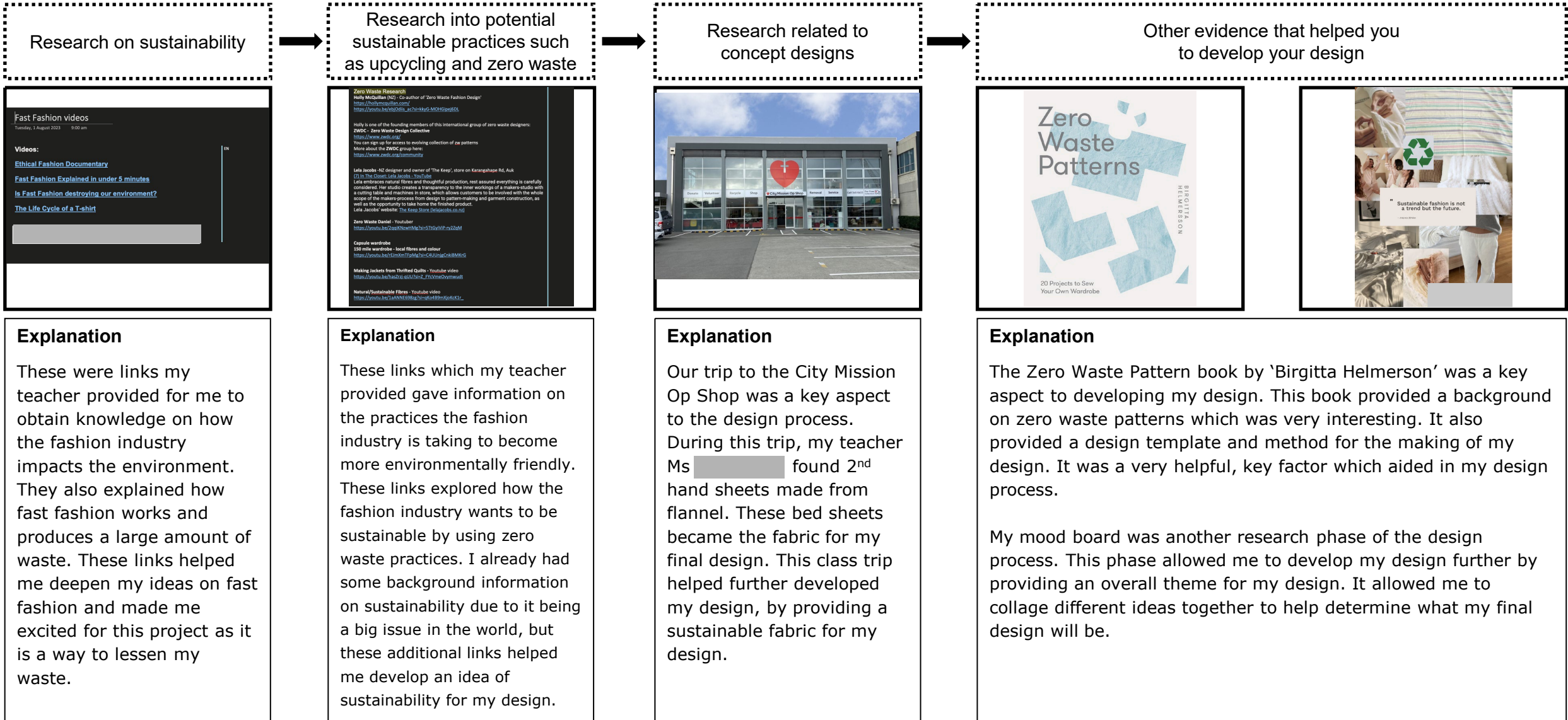
My specifications are:

- waist  and Hips  meaning I used size S (small) from the size chart in the Zero Waste Patterns Book.
- 2<sup>nd</sup> hand flannel sheet
- Elastic waist band
- Zero waste pattern size 140cm (width) by 120cm (length) plus an extra 5cm on the length.
- Embroidery of bee with yellow, black and white thread
- Patch back pocket



## (b) Key phases timeline

- Insert images of the different research you undertook at key phases of the design process.
- Explain how these key phases (images) helped you to develop your design.



(c) Sustainable practices in the development of the design – decisions about materials / components

(i) When you were planning your design, what materials and / or components did you decide to use?

While planning this design I decided to use the City Misson Op Shop 2nd hand sheets because I wanted to be sustainable. I also used already existing elastic in the class for a waist band, embroidery thread and vintage stencil of a bee to follow.

(ii) What other materials / components could you have used?

While first developing a design some other sustainable materials which I could have used were recycled denim. However, I decided that the denim would not provide as much comfort. Another component which I thought of adding was a crochet waistband, however I thought an elastic one would be more flexible and comfortable for use.

(iii) How did you make the decision to use your chosen materials and / or components in (c) (i)?

To make my final decision of choosing a flannel 2nd hand bed sheet, I thought about how comfortable the fabric would be on my legs when lounging/sleeping. The zero-waste pattern I wanted to use called for a large rectangle of fabric, so the sheet was a suitable fit and size. The striped pattern on the fabric also matched with my classmates allowing me to feel a sense of belonging with my peers when I wear them. A big deciding factor to use the sheet was the sustainable aspect to them. The fact of them being 2nd hand and me being able to repurpose the fabric allowed me to feel like I am impacting the environment in a positive way.

The embroidery was chosen because it was a delicate, simple way of adding more texture and individuality. Compared to other techniques like screen printing, embroidery is clean and reasonably quick. The bee also further linked back to my identity from my first internal which represents my connection to my beehives at my family batch in [REDACTED]. Finding the vintage stencil in the classroom also added to the zero-waste aspect since I was repurposing an old item.

*Image (optional)*

(iv) Discuss how you made improvements to your design during the development process.

You might consider:

- improvements to better meet the needs of the person, whānau, or community the design is for
- improvements in sustainable practice (materials, economy of use, waste disposal potential, or other aspects of kaitiakitanga).

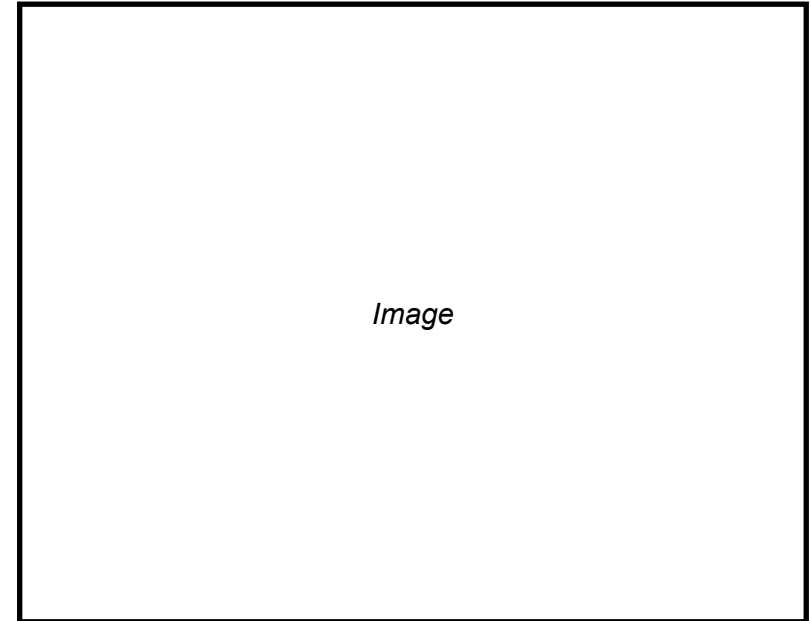
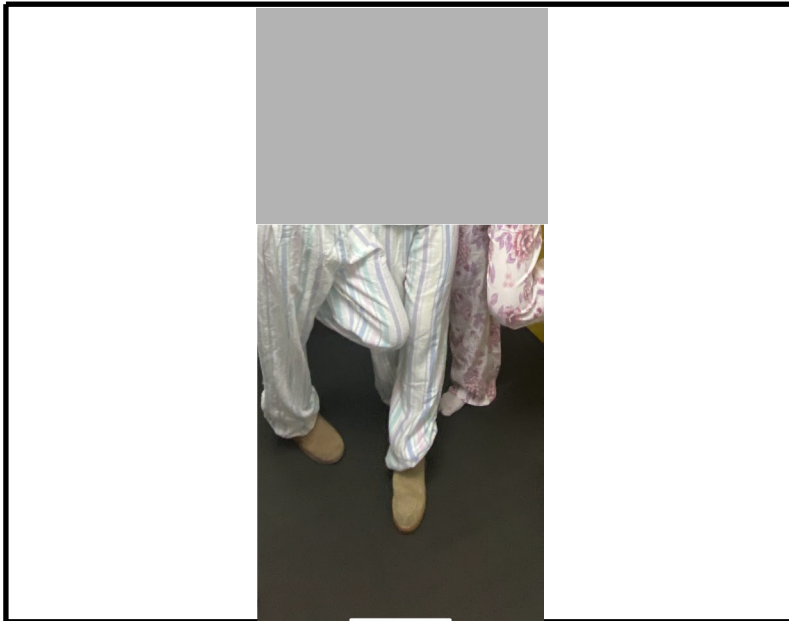
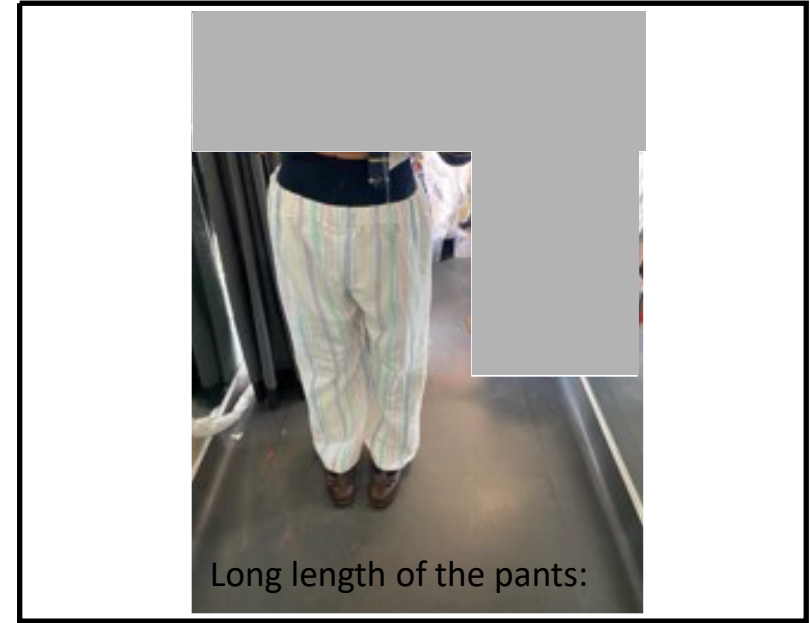
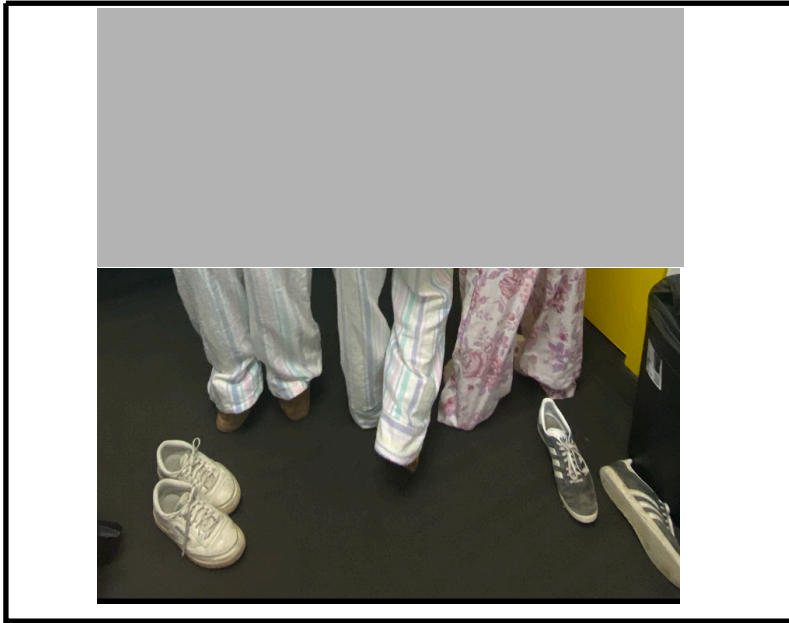
You may support your response using images on the next slide.

During the development process, I made multiple improvements to my design. My first original idea was to use the zero-waste pattern for pants to make casual wear pants. However, I felt I already had a large amount of casual day-wearing pants and needed pyjama/comfy pants instead. I also thought about how I would want some comfortable lounge pants during my trip in Wellington. This improvement of choosing pyjama pants over casual pants allowed my needs to be better met. Another improvement I made during the development process was by finding a vintage stencil of a bee to embroider. Before this I was going to free-hand my initials onto the back pocket of my pants. I found that to be quite challenging and I would have been wasting print paper by designing the embroidery myself. By using the vintage stencils in the classroom, it allowed my addition of embroidery to be a sustainable practice. A further improvement during the development process was by improving the waistband by using elastic and not crochet. This improvement allowed my design to have more comfort and flexibility which positively benefitted my needs for the pants. The overall use of the zero-waste book was a large improvement in the sustainability area. In the past I would have made these pants by wasting a large amount of fabric, so by improving my design processes sustainability it impacted the environment positively by not making waste. I also improved my design by adding an extra 5cm to the length of the pants. I made this improvement to meet my needs as I have longer legs and wanted them to have a baggier look at the bottom.

Moving forward there are some further improvements I would make to my design process. Using the zero-waste pattern book during the process allowed it to become hugely sustainable however some aspects of the book I thought were excessive and unnecessary. For example, the patchwork back pocket had a pattern which made the pocket very thick due to the amount of fabric in it. This was to ensure it was zero-waste but I found it to be very time-consuming. However, I did find this whole design process to be a large improvement to my lifestyle ways and habits around fashion. By using 2nd hand sheets, it was a hugely sustainable practice which in the future I can use in my daily life being able to make my own clothes from using just zero-waste patterns.



You may include clearly labelled images to support your response to part (c) (iv).



**(d) Stakeholder feedback during the development of the design**

Use feedback from TWO different points in the design development process. Use this slide for feedback (1) and the next slide for feedback (2).

## Feedback (1)

(i) At what point in the design process did you ask for this feedback? Type an 'X' in the box that best describes the point in the process.

- Initial research
- Research related to potential sustainable practices
- Research related to concept designs
- Research related to material exploration
- Research related to waste disposal options
- Refinement of designs
- Chosen design

(iv) Explain how you used the feedback to develop your design? You may support your response with a relevant image.

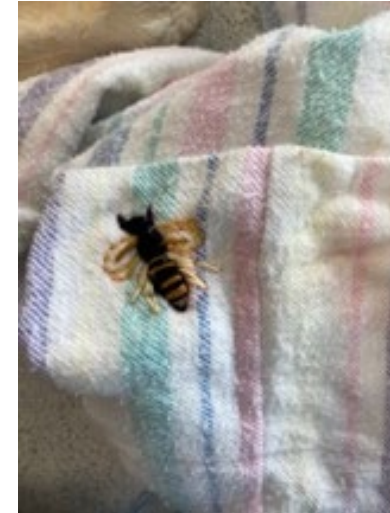
This feedback from [redacted] helped developed my design as I ended up using embroidery to create a bee on my pants back pocket. The bee symbolised my identity as it connected back to my first internal and shows the link to the bee hives at my batch in [redacted]. It further developed my individuality as my friends also made similar pants to mine, so the addition of an embodied bee made my pants unique.

(ii) Who provided the feedback?

[redacted] my textiles classmate

(iii) What was their feedback?

She suggested to me when I was considering concept designs that I should incorporate my identity within my pants. She further suggested that I should use a bee somewhere in throughout my design.



## Feedback (2)

(i) At what point in the design process did you ask for this feedback?  
Type an 'X' in the box that best describes the point in the process.

- Initial research
- Research related to potential sustainable practices
- Research related to concept designs
- Research related to material exploration
- Research related to waste disposal options
- Refinement of designs
- Chosen design

(iv) Explain how you used the feedback to develop your design? You may support your response with a relevant image.

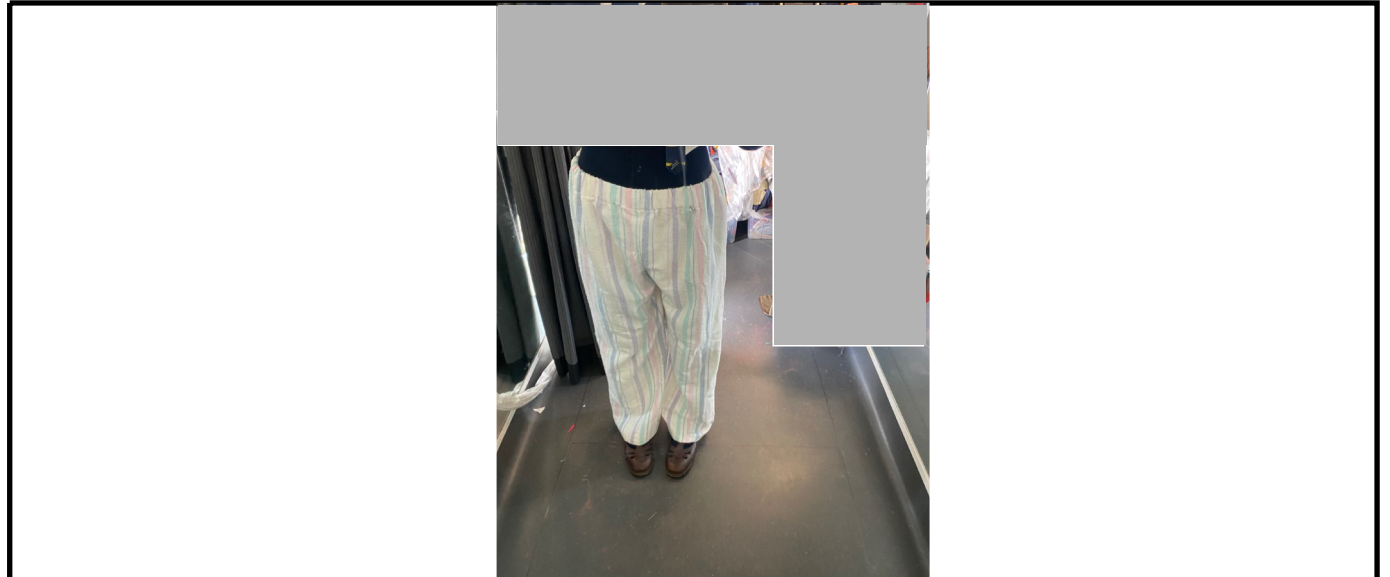
This feedback from [REDACTED] developed my design as I chose to not use the crochet and use an elastic band instead. After the suggestion I considered using it, however I went through the positives and negatives of using a crochet waistband and it didn't fit my needs for my pants. I wanted pants with stretch and flexibility to them and the crochet waistband would not have provided that. From her feedback it allowed my design to be further developed as I decided to use an elastic waistband instead which suited my needs and provided additional comfort.

(ii) Who provided the feedback?

[REDACTED] my textiles teacher

(iii) What was their feedback?

My teacher, [REDACTED] suggested that I could use crochet to create a waistband for my pants. The crochet waistband would be used instead of an elastic.



## Merit

**Subject:** Materials and Processing Technology

**Standard:** 92014

**Total score:** 06

Q	Grade score	Marker commentary
1	M6	The end user is identified and explained. Specifications are clearly identified. Research into sustainable practices is evident and this was the basis for material / component choice. Evaluation of substitute materials was carried out due to design process rather than sustainable practices. Improvements to design are explained. Economic use of material is explained. Stakeholder feedback was considered in the development of the design.