

	Grade: Low Merit
3	<p>For Merit, the standard requires the student to examine different materials to develop a Materials and Processing Technology outcome. This involves investigating the performance properties of different materials through ongoing experimentation. The ongoing experimentation will incorporate feedback and guide refinement of the selection and use of materials in the creation of purposeful outcome.</p> <p>The student has created a quilted bag for a family member by combining and manipulating different textile materials.</p> <p>The evidence reveals the initial experiments combining satin, cotton, cotton knit, and chiffon broadly explored the performance properties of weight, workability, texture, and transparency. Further research and experimentation is completed and a cotton fabric chosen as suitable. A decision is made to investigate the stability and visual appeal of quilting with sewing thread using different stitches and stitch patterns.</p> <p>The ongoing investigation into quilting has guided refinement. Stakeholder feedback is incorporated during throughout the development of the outcome, and key and wider stakeholder opinions guide the student to further explore the performance properties.</p> <p>A more secure Merit requires the student to demonstrate they have refined their material choice through more in-depth exploration. For example, examination of options for wadding to explore cushioning when combined/layered with the cotton fabric.</p>

### Conceptual Statement

I will be designing a product for my sister to fit all of her books and supplies she needs for a full day of learning and lectures. She is attending the university of Waikato so it will be worn there. It is needed because she has to go back to her hostel and switch out her books after most lectures before she goes to her next ones. It will need to be completed by the 21st of June 2024.

### Specification

- Durable
- Comfortable
- Has pockets
- Handles/straps
- Rainproof
- Looks pretty/nice

### Concept Development



Green material - Satin polyester

Floral material - Cotton

White soft material - Cotton knit

White transparent material - Chiffon polyester

Satin - characteristically glossy, smooth or lustrous material, typically with a glossy top surface and a dull back.

Cotton - relatively high tensile strength, and its natural coloring is white or slightly yellowish.

Cotton Knit - a soft knit which commonly comes in jersey, rib and interlock weaves.

Chiffon Polyester - a very light, transparent fabric in canvas weave and produced with crepe twist yarns.

#### Stakeholder Feedback:

Sister:

I don't want the satin material because it's slippery. I like the cotton because it is durable and a high strength rate. Cotton knit is nice but don't think it would be good for a tote bag though. Don't like the chiffon polyester as it does not look durable and it is transparent.





(mum):

While silk looks pretty, I feel that the cotton and cotton knit would be the strongest materials to use

#### My Response:




The satin was too slippery when I was trying to sew it. The cotton was definitely the easiest to sew and is a nice thick/durable material. The cotton knit is a very thin material and I have found that it bunches quite a bit when trying to sew. The chiffon polyester material does not look very clean (you can see the seams quite easily). From my feedback I think I will most likely use cotton for my project I make.

### Material Investigation – Possible Materials I Could Use

FABRIC COMPOSITION	MATERIAL STRUCTURE	CHARACTERISTICS	PERFORMANCE PROPERTIES	NATURAL OR SYNTHETIC
100% Cotton fabric 	Woven	It feels durable and not stretchy and not very soft.	<ul style="list-style-type: none"> <li>• It is slow to dry</li> <li>• Can be damaged by mildew</li> <li>• Comfortable to wear</li> <li>• Wrinkle easily</li> </ul>	Natural
100% wool fabric 	Woven	It feels soft and warm and can be a little stretchy but not a lot.	<ul style="list-style-type: none"> <li>• Flexible</li> <li>• Elastically</li> <li>• Wrinkle resistant</li> </ul>	Natural
Denim 	Woven	It is a lot like cotton since it is made out of it just has a bit of a different feeling to it.	The same as cotton	Natural
Polyester 	Woven	It is very light weight and flowy	<ul style="list-style-type: none"> <li>• Quick drying</li> <li>• Durable</li> <li>• Moisture resistant</li> <li>• Retains shape</li> </ul>	Synthetic

#### My findings:

I have found out that cotton can be comfortable to wear and that you have to wash it before using it which means it will be nice to carry around on your shoulder around campus and is durable and strong enough to hold everything.

ATTRIBUTE TO MEET	MATERIAL SELECTED	TRIAL / TEST	TEST RESULT - DETAILED	PHOTO EVIDENCE
Durable and Strong	Cotton	I will swipe a piece of sandpaper across some cotton fabric and see how many swipes it takes before it breaks/rips a hole.	It took me 28 swipes with sandpaper before the cotton ripped and got a hole in it	
Durable, strong and protective	Wool blanket	I will swipe a piece of sandpaper across some cotton fabric and see how many swipes it takes before it breaks/rips a hole.	It took me 58 swipes with the sandpaper before the wool ripped and got a hole in it	
Protective	Polyester blanket and cotton material	I will sew the polyester between the cotton material then place a glass jar inside then drop it of a ledge onto concrete and see if there is any damage to the jar.	After dropping it and opening the cotton and polyester there was no damage to the jar (did not crack).	

**Stakeholder Feedback:**

**Sister:**  
I like the idea of the protective test as I need my laptop in my tote bag and don't want it to be damaged. I would prefer the cotton material over the wool as I don't want it to be itchy when I grab things out of it.

**[Redacted Name]:**  
All of the fabric looks well tested but I think the cotton, or the cotton blend fabric would be best for the bag itself.

**My Response:**

I will add a laptop case into the tote bag using the protective layer technique and will use cotton to quilt the outside of the tote bag and line the inside of it with cotton as well. I will use the polyester blanket because it is very cushioning. I will use cotton because it is durable, and it will not rip easily.

**( Pocket protection)**



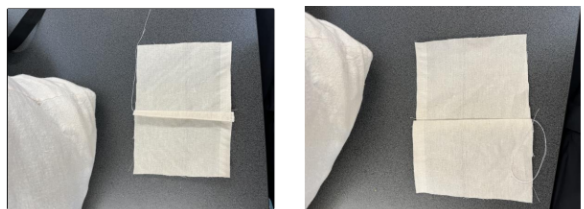
**FEASIBILITY:**  
This technique is very good with the sewed lines forming Squares on the fabric which holds the blanket together so it Wont all fall to the bottom of the two fabrics when sewen into The bag to protect her laptop

**STAKEHOLDER FEEDBACK:**  
Sister - I like the idea of being able to put my laptop in the bag without having to worry about it breaking at all.

**[Redacted Name]:** - Seems to look secure and will protect whatever's inside

**MY RESPONSE:**  
I will keep this idea and make two then sew them together Around all side apart from the top so you can slide the Laptop straight into it.

**(Seams)**



**FEASIBILITY:**  
This technique Is very good with leaving a clean seam once Sewen forming a good look when put together. I will use this technique for sewing the whole bag together.

**STAKEHOLDER FEEDBACK:**  
Sister - I like that there will be clean seams when carrying the Bag around as I want it to look as nice as possible when Wearing it around my University.

**[Redacted Name]:** - The seams will look tidy and be hardly visible, Good idea.

**MY RESPONSE:**  
This gives me a good idea of how she wants the seams to Look And I will try make them look as clean as possible. The French seam will be most suitable because it will leave the bag Looking nice and tidy.

( Top stitching )



**FEASIBILITY:**

By doing the top stitching it will give a clean look on the cotton Material so that the lining (dots) won't come up and overlap on The quilted material.

**STAKEHOLDER FEEDBACK:**

Sister:

I like that she has tested this because I don't think it would look Nice and tidy if the top of the bad wasn't top stitched.

█████ (mum):

The top stitch gives a lovely clean look.

**MY RESPONSE:**

My next steps will be to add this to the bag when it is completed So that the lining does not come up past the outside material and Overlap it in some way.

(Quilting lines)



**FEASIBILITY:**

By doing these lines it has helped me choose which ones I would/ should use for the quilting the outside of the bag.

**STAKEHOLDER FEEDBACK:**

Sister:

I only like the straight lines and no others. I just do not Think they look as tidy.

█████ (Mum):

The straight stitch crossing into diamonds gives a very tidy Appearance and helps hold multiple materials together

**MY RESPONSE:**

My next steps will be to do the quilting with a straight line Stich. I think that a straight line stich will be most suitable Because it does not make the material bunch up and is a lot Easier to sew.

( Quilting lines template )



**FEASIBILITY:**

This test is very good because it will give me an idea of what Quilting on the bag will look like and how the shapes will turn Out when the lines are sewn.

**STAKEHOLDER FEEDBACK:**

I like the lines that you have done I think it will add a nice pop To the design of the bag when it is done.

█████ (mum):

The quilting lines give a lovely finished look to the tote.

**MY RESPONSE:**

My next step is to include this into my final outcome when Making the bag because the material did not seem to bunch up When I was sewing it and it leaves a nice design.

( Straps )



**FEASIBILITY:** This is a good test because it gives a visual Of the how the straps will look and how durable they will be Because I folded the material so that it is layered and back Stiched at each end so the stitching does not fray or break.

**STAKEHOLDER FEEDBACK:**

Sister:

I like how the straps look, and they are not too thick or thin In width. The stitching along the side of the straps look clean And tidy.

█████ Good width and looks like a tidy finish.

**MY RESPONSE:**

I will keep this design on the bag because of the feedback I Have received. The cotton material keeps the straps nice and Strong.



### Concept Refinement



#### Stakeholder Feedback:

Sister -  
I like the size of the bag and how she has Chosen to sew it together.

[Redacted] - Sizing's suitable for an everyday bag, Straps seem a little thin and flimsy though.

#### My Response:

I won't change any sizing of the pattern and how I sew it together. I will sew it together a bit Tidier when I make the bag. The size is big enough That it can fit a laptop, books, stationary, air pods, lunch/lunchbox

### Outcome



#### Stakeholder Feedback:

Sister - Very happy with the outcome and proud of what you've accomplished.

[Redacted]  
Its neat and tidy, seems like the bag itself has enough space to hold everything. Its quite stable but also is soft enough to fold without creases or damage which seems important. Overall, it looks really good and is well Thought out