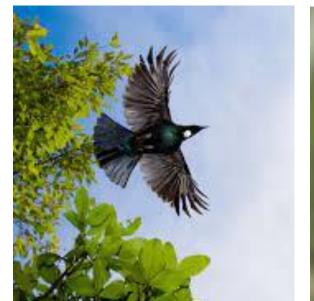


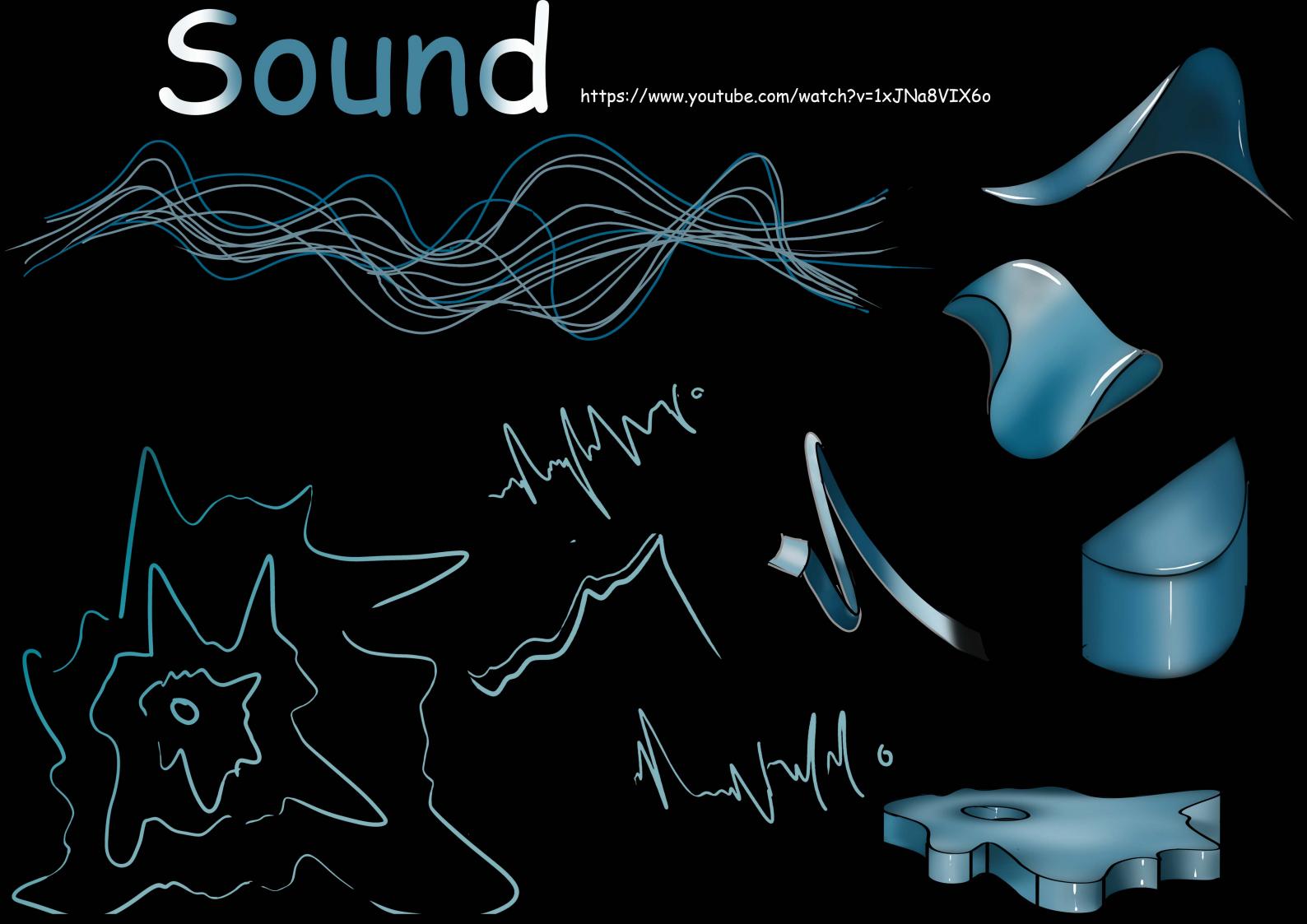
Fun, confident and flexible as they climb onto branches with their feet and claws to get food It has soft textures, blended colours, white fluffy neck features, long beak





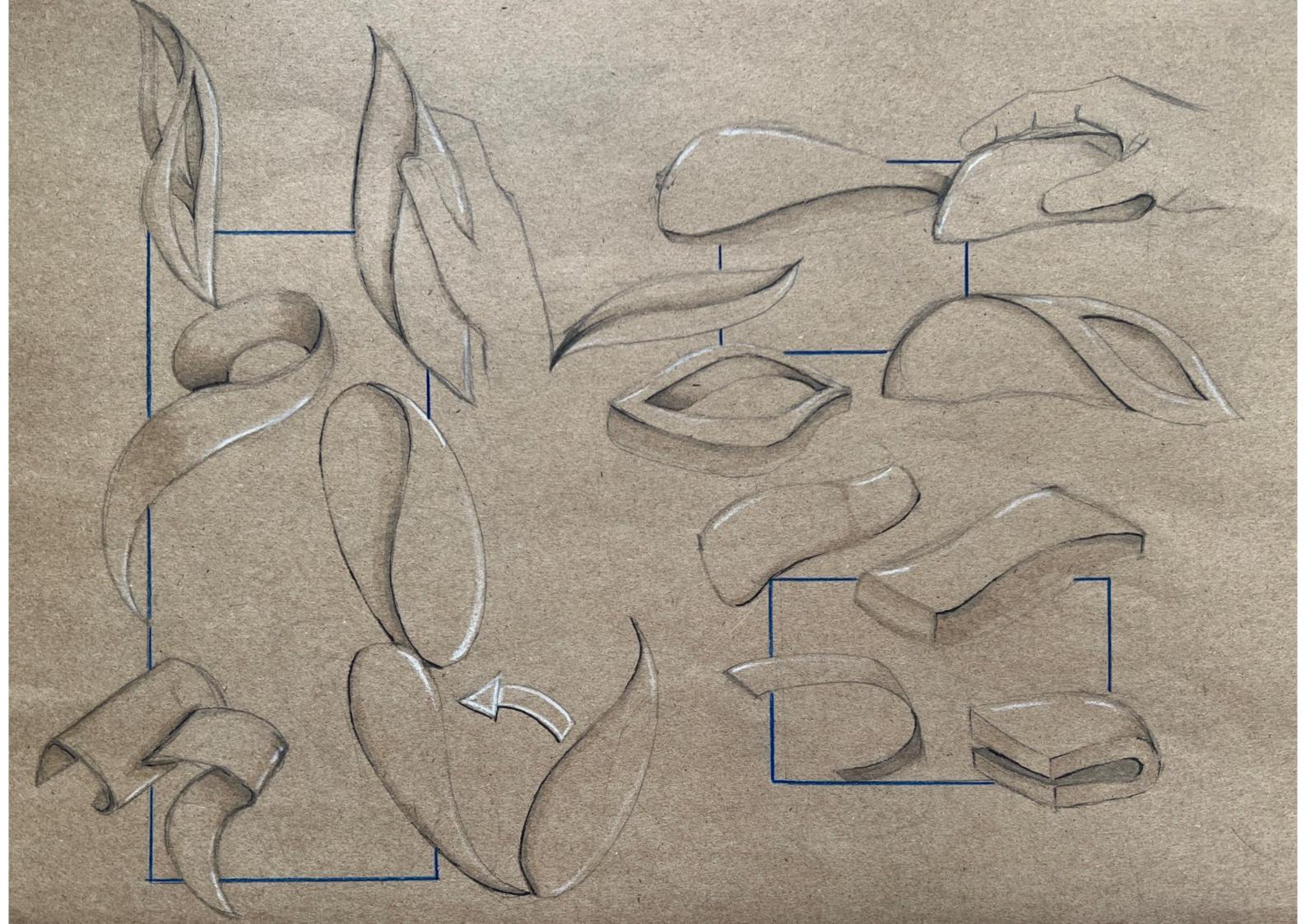


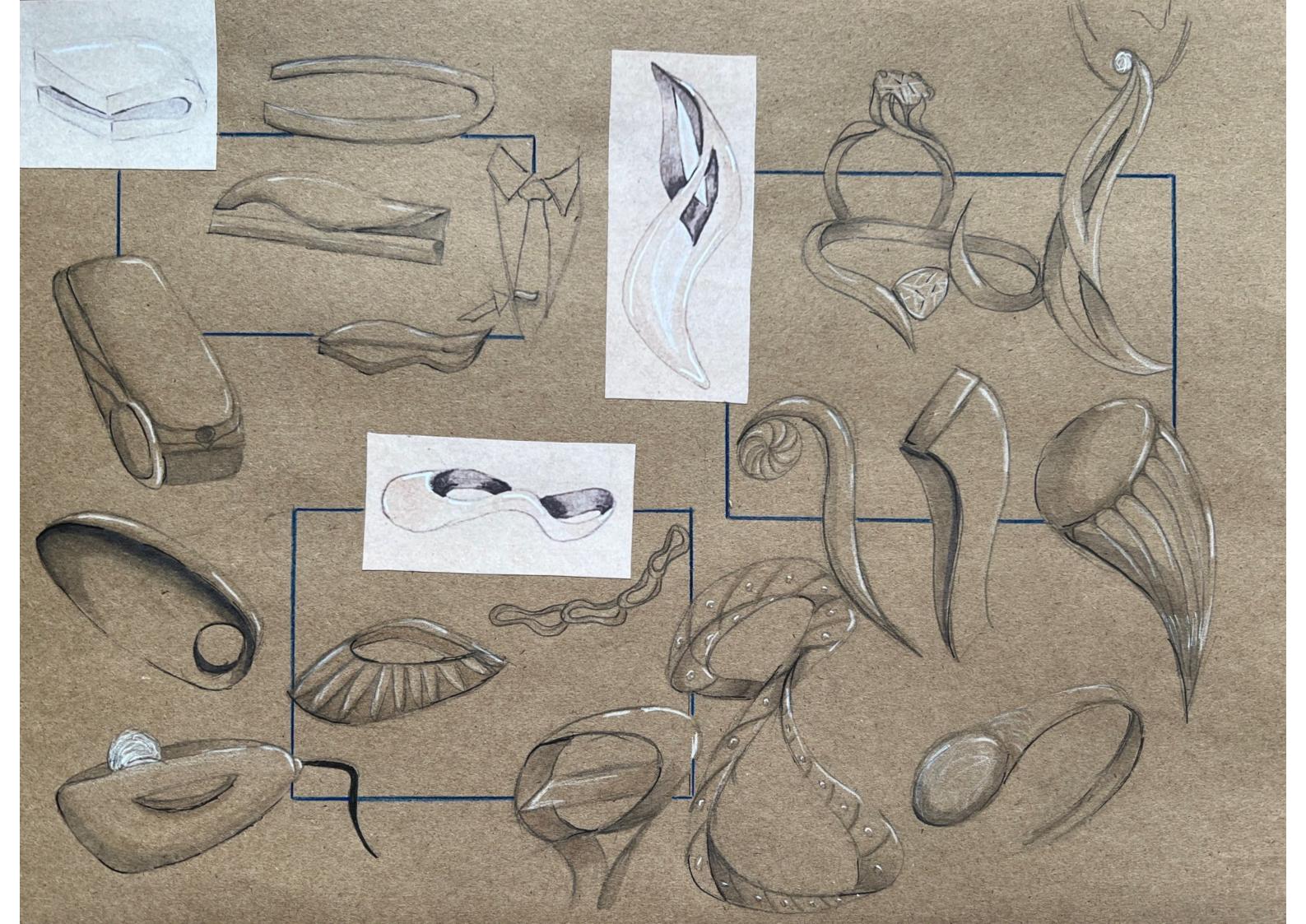




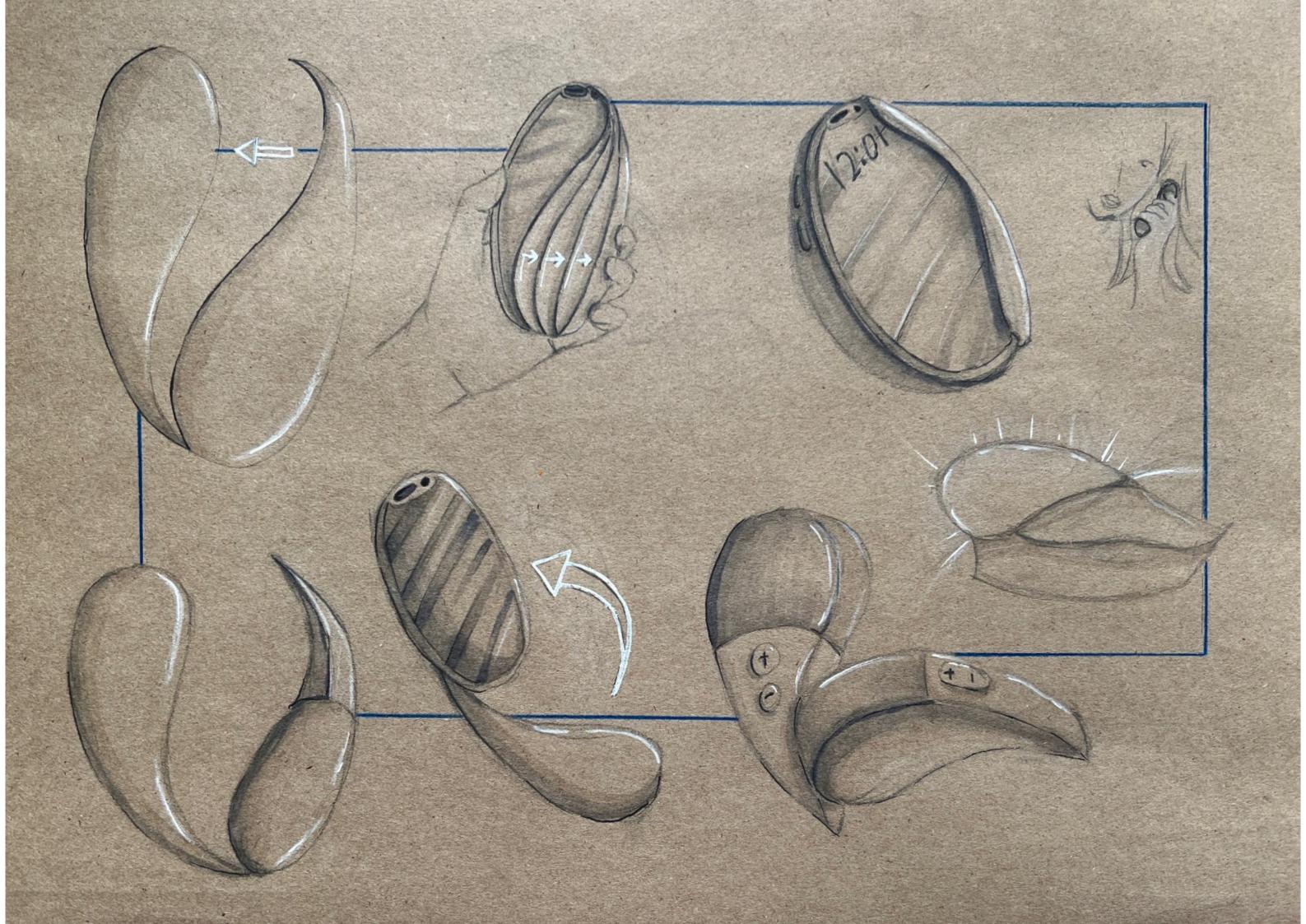




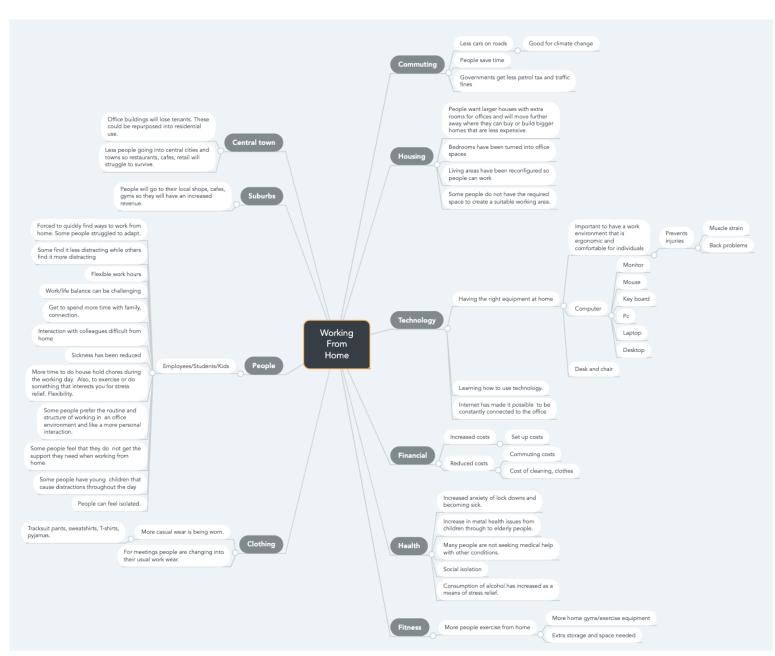








Situation



More people are doing school and work from home. This means that people are spending a lot of their time at their desks on their computers, so more people are getting injuries from using uncomfortable and unergonomic products, such as computer mice, keyboards, and desks.

Brief

I am going to design a computer mouse that is adjustable and multi fit. It will be charged using body heat. It will be comfortable and user-friendly with the added benefit of monitoring an individual's health.

Specifications

Aesthetic:

- A modern stylish design.
- Would fit harmoniously in any workspace/home environment.

Function:

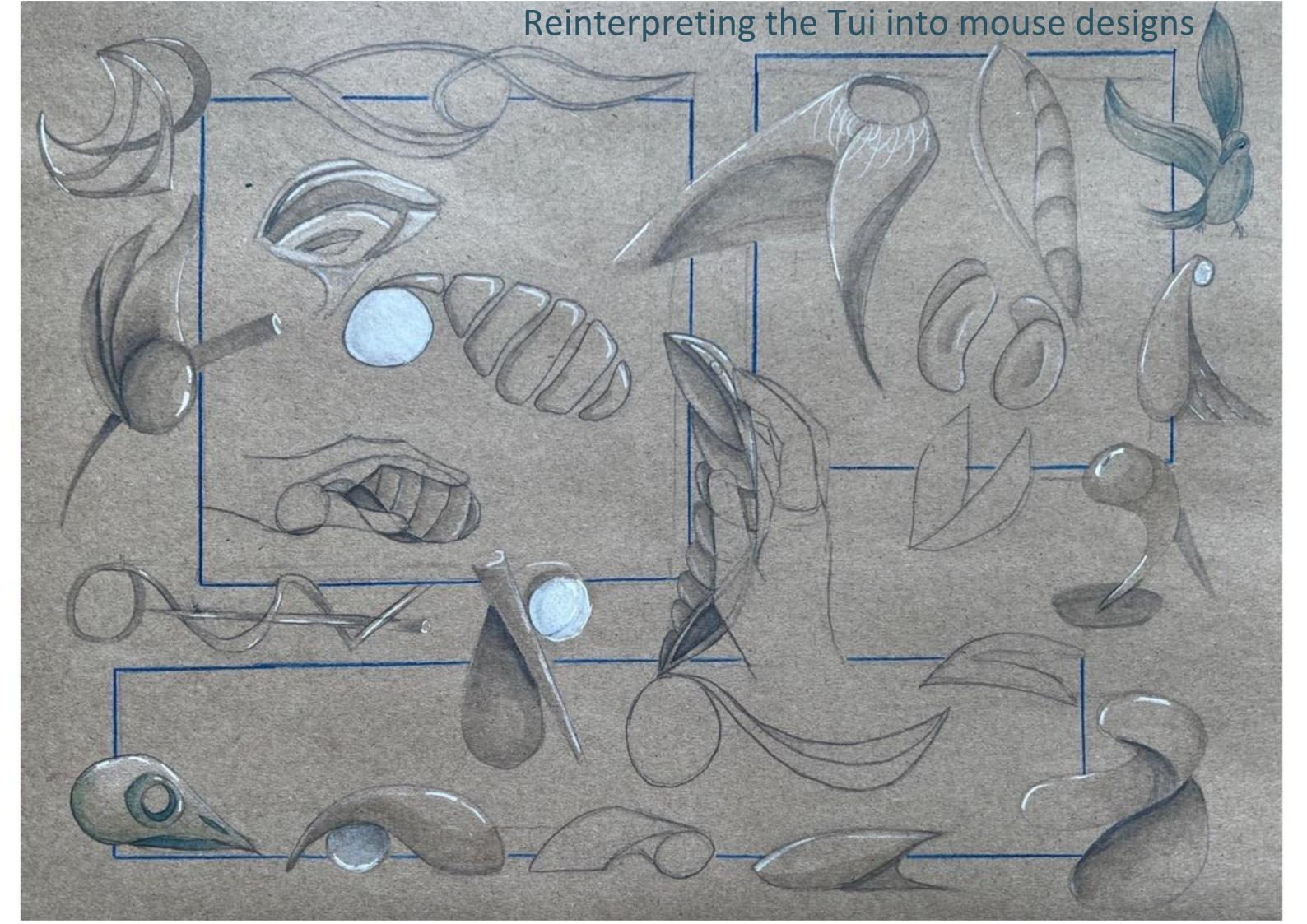
- The mouse must fit comfortably in any sized hand, by being adjustable.
- The body heat from the user's hand will charge the battery, making it environmentally friendly. It can also be charged with a USB-C cable, so it must have a USB-C port.
- The mouse must be sensitive to the small movements of the hand, so that there is no stress on the wrist.
- It must be wireless as many computers do not have anywhere to plug in a mouse.
- It will be compatible with any device that uses Bluetooth.
- The mouse must be able to monitor various health parameters during use to alert the user to changes in their levels of stress.
- The material must be strong and durable but light so the mouse is easy to use.

Ergonomics:

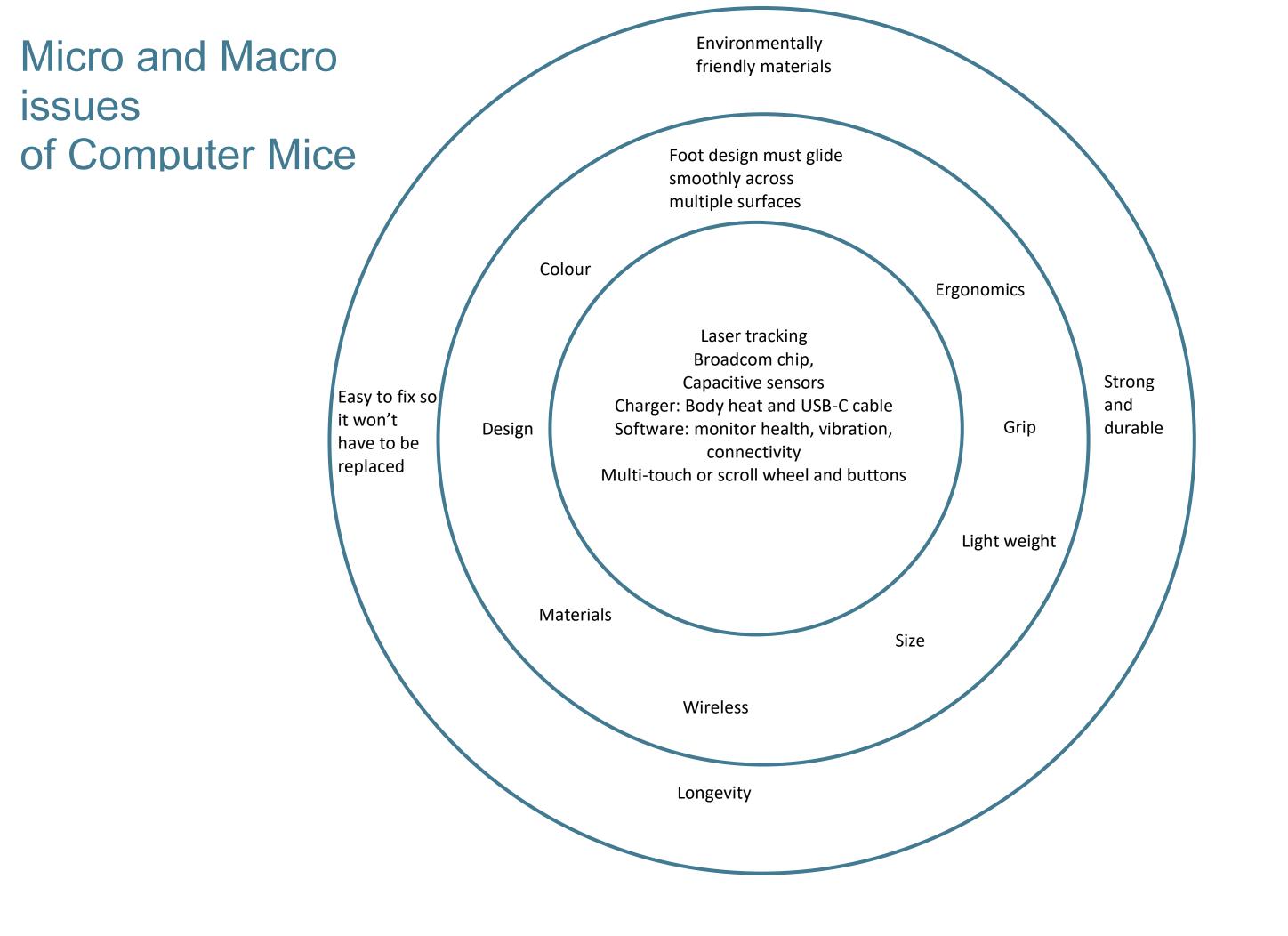
- The hand must be positioned snuggly against the mouse to make the battery charge efficiently and for the health monitor to work.
- The hand must sit comfortably, reducing as much stress on the user as possible.

Considerations:

- Will the mouse have a scroll wheel, or will it have a multi-touch surface?
- What materials will the mouse be made of?
- Anthropometrics: so it can be used by a wide range of users.
- The safety of the user must be considered so that they aren't injured.







Computer Mouse Research



https://9to5toys.com/2019/04/22/herman-miller-inspired-wireless-mouse-concept/

- + An intriguing Herman Miller inspired design that has a natural wood base with a leather top and buttons.
- + Less plastic and the natural materials would age nicely over time.
- + Would make a statement in any work environment.
- + The contrast of the two materials creates harmony.
- The leather will require maintance to keep it looking nice.
- Design could be more ergonomic for the user.

I liked this use of natural materials.





- + This is a very ergonomic mouse and is good for reducing existing hand and wrist problems, and for preventing them.
- + It is a wireless mouse that has a long battery life.
- + Both your thumb and pinkie finger are supported and do not drag along the desk.
- + the flowing organic lines give a sense of peace and harmony making it pleasing to the eye.
- The mouse is very large so it would be inconvenient if you do not have a lot of desk space.
- The design is not visually appealing
- -The colour will stand out which many users may not like.

I like the design using organic lines to make it more harmonious in a work environment.

- + When using the ergonomic vertical design, your hand is in the "handshake" position, which lowers the amount of stress on the user's arms, wrists and hands.
- + The sensitivity of the mouse (DPI) can be easily changed with a physical switch and goes up to 10000 DPI.
- + The design is aesthetically pleasing because of the LED lights that can be customised to any colour.
- +The design has nice balance and it's curves give it a more harmonious look.
- + The buttons on the mouse, including the rocker, are programable so you can add short cuts to help navigate your computer.
- + It is a sleek design which is pleasing to the eye.
- + It is well proportioned therefore will suit many hand shapes.
- + The plastic is finished with a rubberized smooth texture so that it can be gripped without slipping.
- It is not a Bluetooth mouse so the wire can catch, and an adaptor will need to be used for computers without USB ports.
- There is no place for your pinky to rest, so your hand is not supported.

I like the curved and balanced design which gives it a nice appearance. It is also ergonomic and user friendly.



https://positivelyscottish.scot/reviews/top-10-best-handheld-mouse-reviews-with-comparison/

- + This mouse can be used to reduce stress in the user's hands and wrists. It can be used with either hand.
- + It is a wireless/USB mouse so it can easily connect to any device if it has a UDSB port.
- + The mouse can be handheld or used as a normal mouse.
- + There is a scroll wheel and a trackball, so that it is easy to navigate around your computer.
- The scroll wheel doubles as a button, which could be pressed accidentally, which would be annoying for the user.
- The design is not visually appealing.

I like how it is wireless making it easy to use on a desktop.



https://www.apple.com/nz/shop/product/MK2E3ZA/A/magic-

mouse-white-multi-touch-surface

- + It is wireless so it will be able to connect to most devices using Bluetooth without any trouble.
- + It has a long battery life, so you will only have to charge it once every month.
- + It has a sleek minimal design which is pleasing to the eye.
- + the white finish fits seamlessly in any environment
- + The Multi-Touch surface makes it easy to navigate your device.
- The Multi-Touch features will not work with products that are not Apple
- some users find it size and shape hard to use

I like the sleep design and how it is unintrusive.



- + The vertical design is very user friendly and ergonomic. It will reduce wrist pain while still being very easy to use.
- + The 60° slope is a perfect angle so that the user's fingers don't feel like they are slipping.
- + There is a rest for both the thumb and the pink finger so that neither touch or drag along the desk when the mouse is being used. This also eliminates the unconscious gripping in user's fingers.
- + The mouse can be purchased in two different sizes so that it can it be used by a wide range of hand sides.
- + There is a physical switch for the DIP (mouse sensitivity) so that it can easily be changed. The DIP can go up to 3500.
- + There is a feature where an LED light lights up to tell you to take a break and rest your hand. It reminds you to take a 30 second break every ten minutes and a five-minute beak every house.
- The design is not very pleasing to the eye as the comfort was prioritised over the looks. The black/grey plastic is very common.
- It is a wire mouse so it could catch and be annoying to the user.

https://ergonomictrends.com/best-ergonomic-mouse-reviews/

I like how it has been design to be ergonomic and user friendly which is important when people are using them for long periods of time.



History of the Computer Mouse

https://linuxhint.com/computer_mouse_history/ https://history-computer.com/computer-mouse-complete-history/ https://en.wikipedia.org/wiki/Computer_mouse

In the early 1960s Douglas
Engelbart came up with the idea
of a computer mouse. He
enlisted help from William
English. Together they looked at
devices that would interact with
information displays. It was
made of wood and had a single



The first production of the computer mouse was in 1967. Engelbart received a patent in 1967.



William English invented the first ball mouse in 1972 with Xerox's minicomputer system.

In 1974 Jean-Daniel Nicoud designed the two button mouse and wheel

In the early 1980s research was done to use a light instead of a ball to detect motion but its development was stopped due to high production costs.

The first ergonomically designed mouse was designed by Microsoft in 1987. The "Dove Bar" contoured design is still seen today.

In 1988 the optical mouse was invented by Lisa M. Williams and Robert S. Cherry of Xerox Microelectronics Centre. These weren't very popular initially because they required a special mouse pad.



In 1999 the modern optical mice were embedded with optoelectronic sensors. This improvement made the mouse more ergonomic, and this eliminated the need for a mouse pad and cleaning of the ball.

An even better light was introduced, the laser, in 1998. Instead of using an LED it uses infrared laser diodes to illuminate the surface where the mouse operates. This gives more precision. It was introduced into the consumer market in 2004

In the late 1990s a mouse that did not require a special mouse pad was introduced which had more surface tolerance.

1994 Jack Lo invented the first mouse to support a fully upright hand position to eliminate arm twisting and discomfort from using a conventional mouse.

In 1991 Logitech released the first wireless mouse, the "Cordless mouse man"



1960 1970 1980 1980 1990 2000

Ergonomics and Anthropometric

What happens when you use a computer mouse?





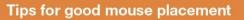














The human hand is an amazing structure









and interact with the world around us.



Let's meet the ergonomic mice

A truly ergonomic mouse is one that fits you. Not just your shape, size and personal preferences, but also the nature of the work you do. Let's meet some of the options.

Standard mouse



OK to use with regular

breaks and task changes

Trackball mouse



Allows you to navigate your computer with your fingertips, allowing your arm to remain supported.

Vertical mouse



Encourages the hand into a neutral 'handshake' position.

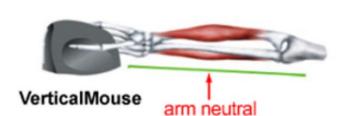
Roll bar mouse



A bar is moved left or right and rolled forwards or backwards for fingertip control. Mouse buttons remain close to hand for finger and thumb control.

Ordinary mouse









The standard mouse forces the user to adopt abnormal postures of the hand over a period of time. This is especially shown with forearm pronation, ulnar deviation and wrist extension Statistics show that 16% – 33% of users experience symptoms varying degrees of pain in their arm, wrist, hand, should and back. (Garze & Young, 2015) Some researchers believe that upper extremity discomfort and pain associated with using a standard computer mouse is caused by forearm pronation ulnar deviation and wrist extension.

Participants in a controlled study carried out by Houwink et al. (2009) using a slated mouse at an angle of 25-30° showed a reduce in discomfort, decrease in unnecessary muscle activity, and better overall posture.

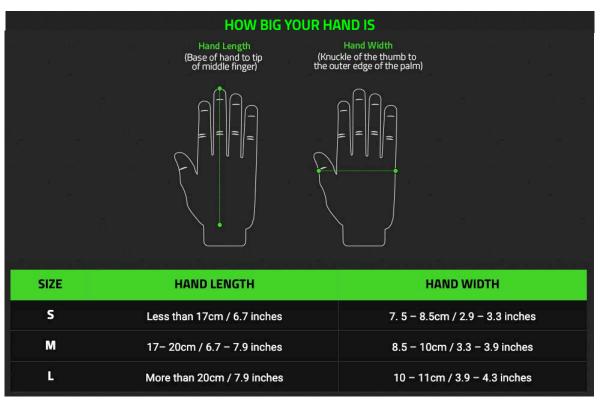
The vertical mouse design remains neutral in the forearm and experiences less neck and shoulder discomfort (Dehghan et al., 2015) A randomized control trial by Conlon et al., 2008 found that forearm support boards can significantly reduce discomfort of the wrist and upper extremities.

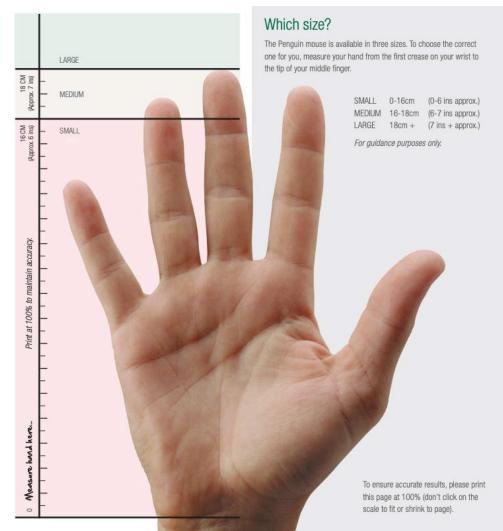
The slanted/vertical mouse I think is designed thinking about ergonomics. They are designed for people. The user maintains a natural 'handshake' position while working. This prevents twisting of the wrist and forearm and pronation of the shoulder alleviating any unnecessary tension and stress from the muscles or tendons. They require less grip strength and force than the traditional mouse.

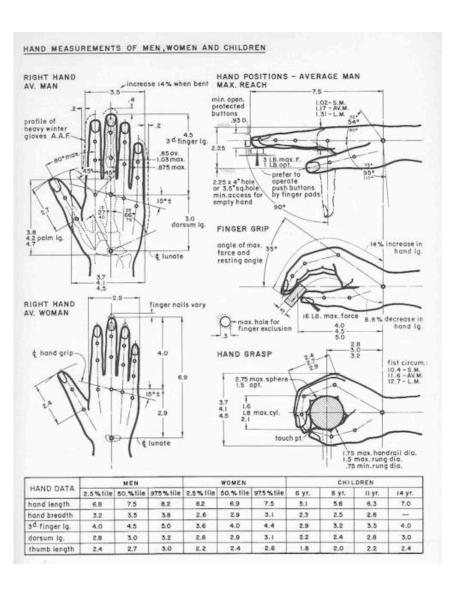
There are a lot of medical conditions that have ergonomic causes in a desk/office environment. Such as Musculoskeletal Disorder (MSD), Repetitive Strain Disorder (RSD) and Cumulative Trauma Disorder (CTD). Users need to choose their mouse carefully, have their office set up ergonomically and have regular breaks when working to prevent these disorders.

https://www.posturite.co.uk/blog/ultimate-guide-computer-mouse-ergonomics https://www.fit4work.co.uk/benefits-of-an-ergonomic-mouse/

https://www.posturite.co.uk/blog/ultimate-guide-computer-mouse-ergonomics $\underline{\text{https://soloabadi.com/en/application-of-anthropometry-in-lightweight-mouse-design/open} \\$

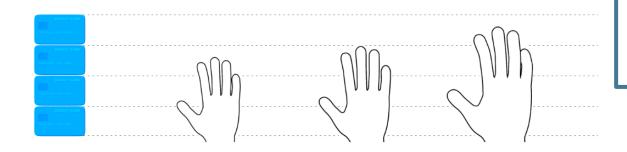






NOT SURE WHAT SIZE YOUR HAND IS?

Use our sizing guide to find out. Simply measure the length of your hand from the little crease below your palm to the tip of your middle finger:



 SMALL
 MEDIUM
 LARGE

 (< 17,5 cm)</td>
 (17,5 -19,0 cm)
 (> 19,0 cm)

 (< 6,9 inches)</td>
 (6,9 -7,5 inches)
 (> 7,5 inches)

 Less than 3 credit cards
 Just about 3 credit cards
 3.5 credit cards

 cards
 credit cards
 or more

I compared these three sites and have decided to make the size of the mouse, medium, for a hand 18.5 cm long, this is from the wrist joint to the end of the third finger. This is important as the second and third finger are used the most.

The following measurements need to be considered for the mouse to sit comfortably in the curvature of the hand in the handshake position.

Average thumb length: Man: 6.86 cm

Woman: 6.10 cm

Hand grasp, circumference: Man: 29.46 cm

Woman: 26.42

 $\underline{https://www2.razer.com/gaming-mice-find-the-right-fit}$

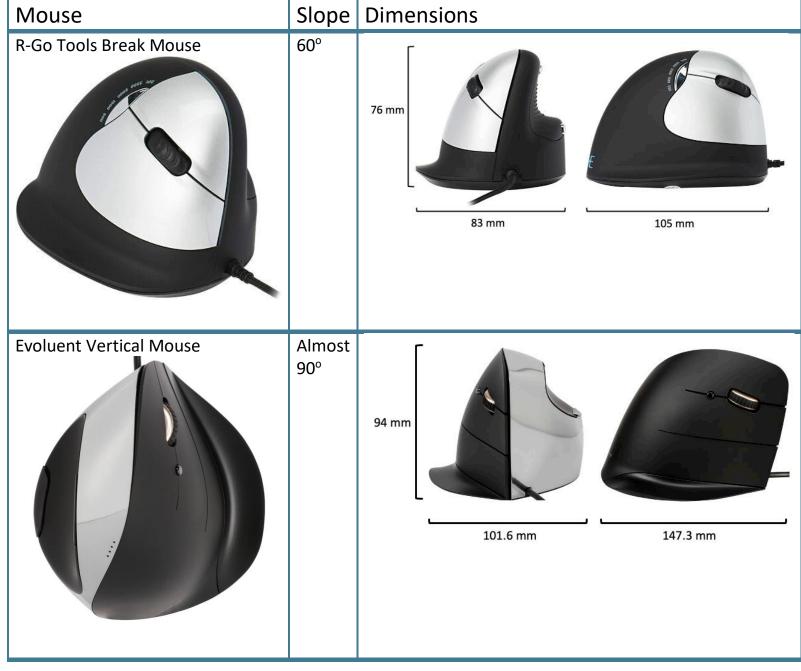
https://www.logitech.com/en-nz/ergo/mouse-hand-size.html

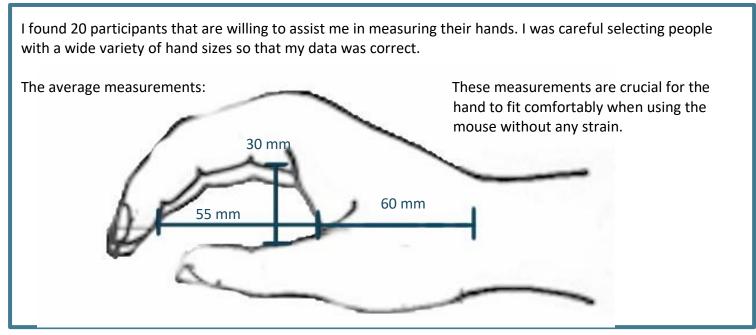
https://www.thehumansolution.com/content/penguin-mouse-sizing-guide.pdf

https://andren.tumblr.com/post/110057719302/the-measure-of-man-henry-dreyfuss

Dimensions and Slope of Vertical Mice







When I looked at the ergonomic slope of the above mice and tested the angles with some clay, I concluded that a slope of 60° was comfortable and didn't place any unnecessary stress on the wrist and all the muscles in my hand, forearm, arm and shoulder were relaxed.





- + The 60° slope angle I created with the clay made my hand sit comfortably.
- + I indented a comfortable place for the thumb to rest.
- + I carved out a shape at the front to make the design more appealing.
- + The wide base gives the design stability.
- The design has a chunky appearance.
- It could be quite heavy to use depending on the materials it is made from.



+ To make the design more appealing and to fit the inside curve of a hand, I sculptured a spiral design. This created a nice organic flow.





+ I added a lip to the outside to support the pinkie finger from dragging on the table and prevent it feeling like your hand is slipping off the mouse.

+ The organic shape gives it a soft appearance.



- + The smooth surface provides a good place for your fingers to rest. It also allows the palm of your hand to sit comfortably.
- + This shape will allow buttons to be added later.
- + The lip around the bottom prevents both your pinkie and your wrist from dragging on the table.
- + The shape is nice and organic which is appealing.



- + The cut outs in the design make the mouse look light.
- + The long 'tail' supports the wrist and forearm and reduces wrist movement.
- The design is very long so it would be inconvenient when in use.
- The slope is not at a 60° angle, though it is still comfortable it will not minimise wrist, arm and shoulder discomfort and stress.
- The arch looks quite chunky and could be made to look more elegant and flow with the rest of the design.
- + The shorter design makes the design more practical but still supports the wrist so that it does not drag on the table.
- + The arch has been heightened and looks more in proportion.
- The slope is still not 60° .



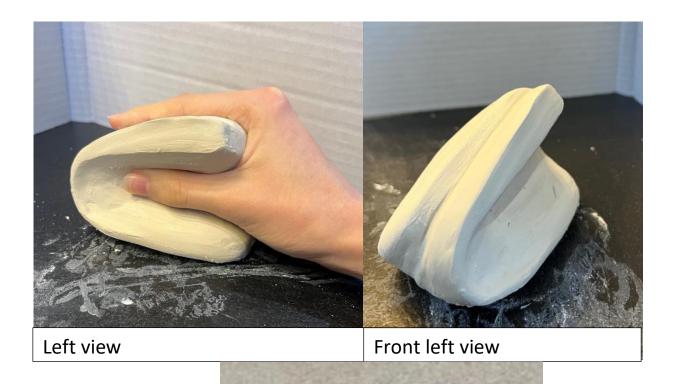
- + The slope has been adjusted to 60° so it is ergonomically fit.
- + A pinkie rest has been added to support the hand.
- + The design has a nice organic curve that will work well with buttons.
- + The hollow makes the mouse appear light therefore it will be lighter to use.
- Because the arch has been lifted, there is no support for the





- + An organic curve has been added to support the thumb.
- + The design looks balanced as one side is a solid curve, and the other side is hollow. This makes the design visually appealing.
- Even though the thumb is supported it wasn't very comfortable.



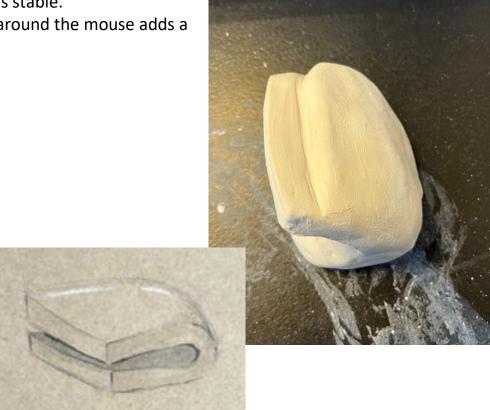


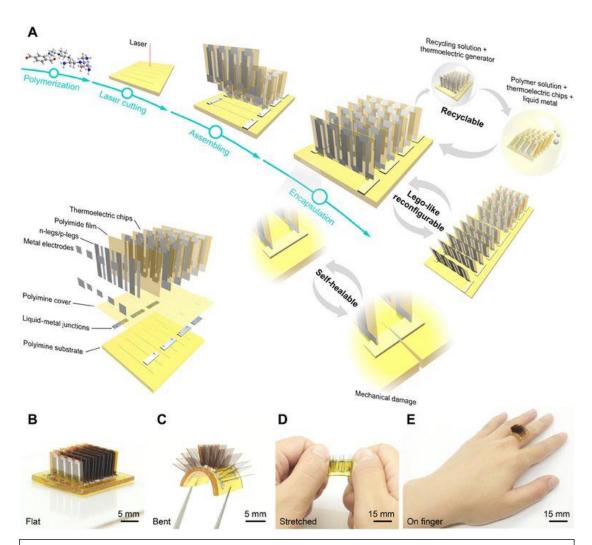


- + The simple organic design is aesthetically pleasing.
- + It has a 60° slope to minimise shoulder, arm and wrist pain, ergonomic.
- + The concave design ensures that the thumb sits comfortably.
- + It has a solid base so that it is stable.
- + The sculpted line that goes around the mouse adds a nice design detail.



Top view





Thermoelectric generators (TEG) turn your body heat into electrical energy. It uses the difference in temperature between your body's heat and the surrounding air. The heat automatically dissipates to cooler areas so that equilibrium can be established. Thermoelectric generators use the electric current produced when energized particles move from the warmth of your body to the cooler air along a chip. The part of the TEG that touches your skin turns your warmth to energy and the outside is a shield that the cold side from the sun's rays, which is done by using a wavelength-selective film to preserve the temperature differential.

The thermoelectric generators are extremely flexible and have self-healing properties which allows the TEG to bend with your body and not be damaged. A special material is embedded inside which allows it to heal itself from cuts and tears by resealing the breaks on a micro level. Each component is flexible, like the circuitry which is made with stretchable wires, which maximises the flexibility of the gadget and results in a stretchy, rubberlike bracelet.

These TEGs can only generate about one volt of energy for every square centimetre of skin space, which is less than existing batteries, but it is enough to power smaller devices such as watches and mice. The TEGs are made with recyclable technology and sustainable resources. The researchers are currently working on integrating a voltage converter into the TEG so that larger electronics can also be powered using this technology.

https://www.newscientist.com/article/2276215-wristband-that-turns-body-heat-into-electricity-can-power-an-led/

https://eandt.theiet.org/content/articles/2021/02/body-heat-could-directly-charge-wearable-devices/

https://www.popularmechanics.com/science/a35533572/body-heat-battery/#:~:text=A%20tiny%20new%20wearable%20gadget,turn%20that%20energy%20into%20power.

Thermoelectric generators research

"If your body could do the same work as a watch battery.. that's a win for the environment."



The PowerWatch Series 2 is powered by this same technology. Your body temperature remains at a temperature of around 37°C. The heat that comes off your body is absorbed by the watch while it is being worn. On the other side of the watch there are heat sinks, which help this side remain considerably cooler. The difference in temperature between the two sides is what makes the technology work so well when integrated into a watch.

When the watch is not being worn it is powered by a small internal battery so that the date and time remains correct. This battery also keeps the watch going when the warm side of the watch is heating up.

https://www.powerwatch.com/

https://gizmodo.com/this-smartwatch-powered-by-your-body-heat-never-needs-c-1788878862

I am going to use this TEG technology in my mouse design, so it is more environmentally friendly. Even though a small chargeable battery will have to be used the majority of the energy will be harnessed from the hand's heat and the external temperature. When designing the mouse it is going to be important to ensure that the surface area where the palm of the hand rests so smooth and the contact area is as large as possible to ensure optimal heat transfer.

Health monitor research

Keeping track of your heart rate is important because it can give you insight into your heart health and metal heath.

Dr. Sinha says. "Many people are walking around with a resting heart rate that is too high, due to factors such as too much caffeine, dehydration, inactivity, and persistent stress."

Are you stressed?

Your heart rate can give a fairly accurate indication of your stress levels. If you have a high heart rate it could mean that you are stressed.

Are you drinking enough?

When you are dehydrated, your heart reacts by beating faster. So even if you are feeling relaxed, a higher heart rate may mean you need to increase your fluid intake.

Have you had too much caffeine?

Caffeine is a stimulant that can raise your heart rate, so be sure not to overdo it.

Do you have a high resting heart rate?

Several studies have confirmed that the higher your resting heart rate, the greater your risk of death. Most of this risk is due to heart disease, but other causes of death also contribute to the risk. One study showed that a RHR of more than 90 beats per minute was associated with higher heart disease death rates (doubled in men and tripled in women).

https://www.sutterhealth.org/health/heart/get-to-know-your-heart-rate-it-might-save-your-life

How to measure heart rate:

Optical heart rate monitors use light to measure tissue changes at the sensor's location caused by blood circulating throughout the body. As your heart beats, this volume changes and high blood volume causes less light to return to the optical sensor, whereas low volume increases the amount of returning light.

Most wearables with heart rate monitors today use a method called photoplethysmography (PPG) to measure heart rate. PPG is a technical term for shining light into the skin and measuring the amount of light that is scattered by blood flow. Measuring PPG in a resting state, such as sitting, standing still is relatively straight forward. People have a diverse range of skin tones which absorb light differently. This means that light of different wavelengths must be used to minimise any problems skin tine may cause.

The finger has very good blood perfusion and has a high density of capillary vasculature. This makes the finger, both at the tip and just below the knuckle where rings are typically worn, a good place to measure biometrics with a PPG sensor.

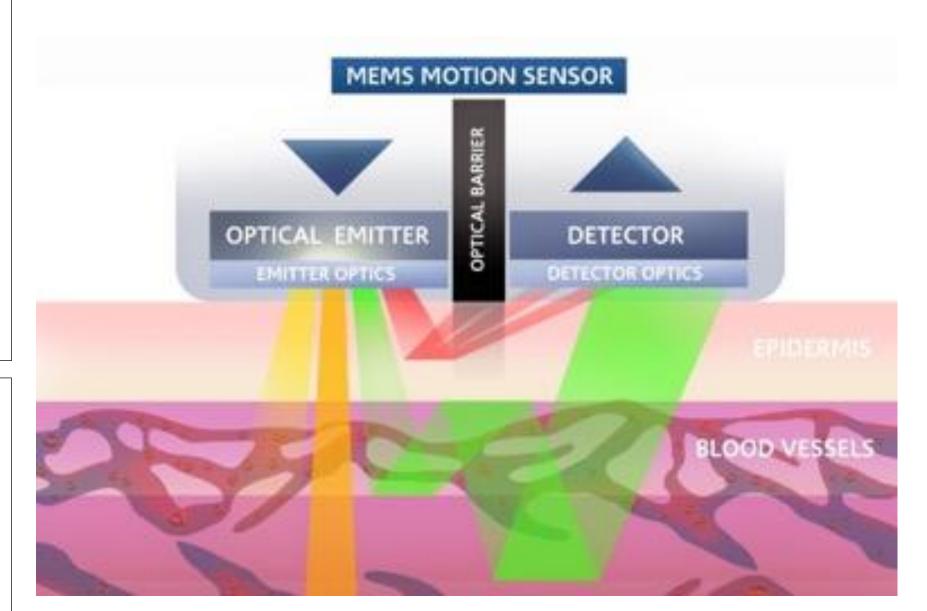
By using this PPG sensor, it can measure your breathing rate, blood oxygen level, ECG and blood pressure.

An algorithm then processes the signals from the PPG into heart rate data and calculates additional biometrics.

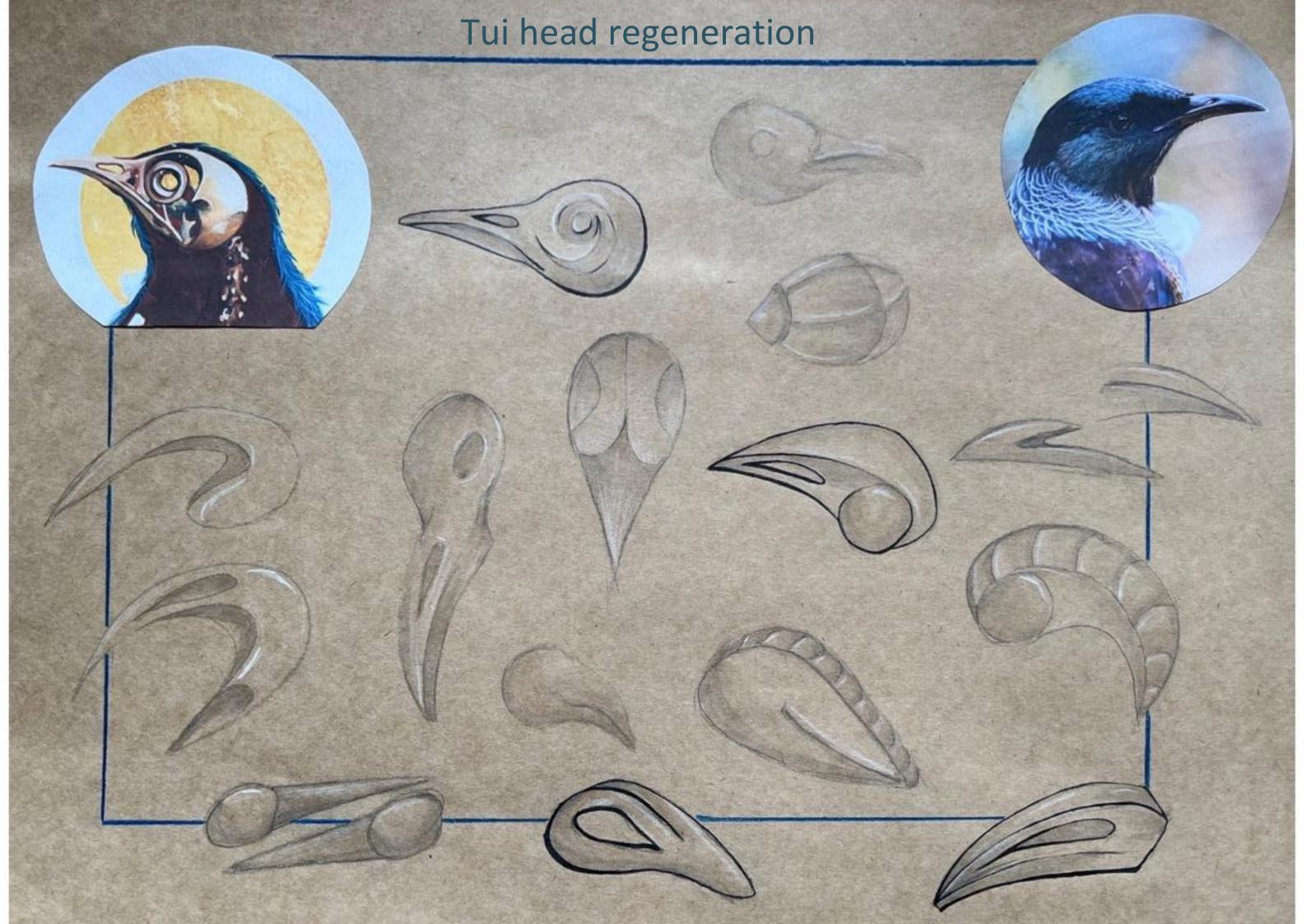
https://valencell.com/blog/optical-heart-rate-monitoring-what-you-need-to-

know/#:~:text=Most%20wearables%20with%20heart%20rate,is%20scattered%20by%20blood%2

https://valencell.com/blog/heart-rate-monitor-location-matters/



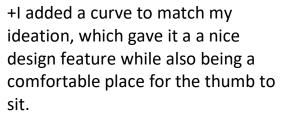
I am going to use this PPG sensor technology in my mouse design so that the consumers can keep track of their health while working. I think this is important so they can make adjusts when required. I will need to think about what finger will be used and the placement on the mouse to ensure you get an accurate reading.







- + It has a simple organic design which is aesthetically pleasing.
- + The left side is a concave design to ensure the thumb sits comfortably. The right side is convex this is so the curve of the hand sits nicely. I have deliberately added a line down the middle to suggest layering of feathers. The right side is slightly higher than the left to emphases this detail.
- + It has a 60° to minimise shoulder, arm and wrist pain, ergonomic.
- + It has a solid base which makes it stable.
- + The palm of the hand fits snuggly against the mouse, so there will be a hide surface area for the thermoelectric generators to work over.
- The design looks heavy and chunky.



- Because there is not a surface at the bottom of the mouse, there is nowhere for the mouse laser tracking to go.





+ I took the Tui's circular eye from my ideation and added it to the bottom so there is a place for the mouse tracking to go. It resembled the skeletal structure of the birds head.

Back / Undo Forward / Redo

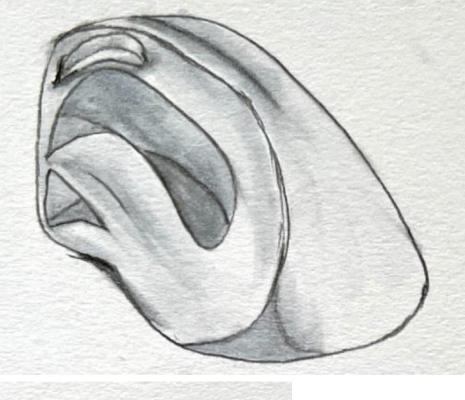
• The thumb sits comfortably on the rest. It is easy to move your thumb up to press the buttons. It also does not add any extra stress on your hand or thumb. These buttons make it easier to navigate your computer.

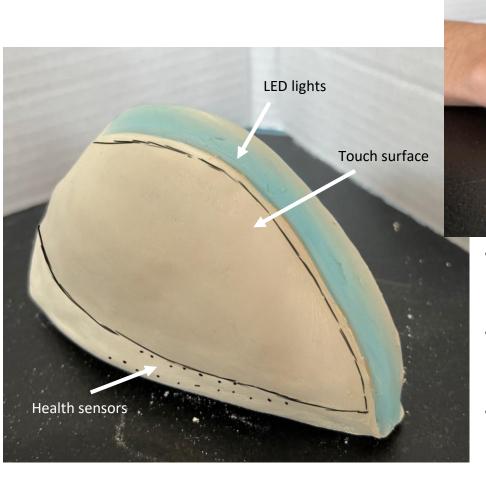


Exploring button shapes







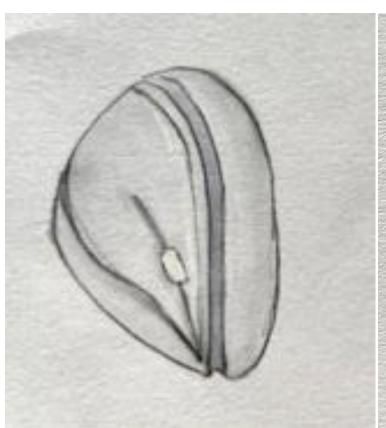




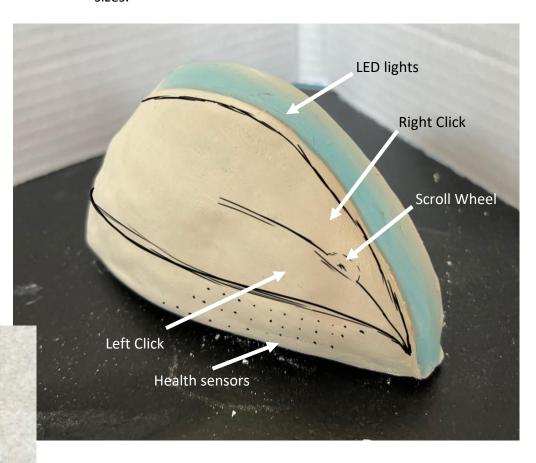
- I added the LED lights along the ridge to give the effect of feathers meeting, like the Tui. They also add a way to personalise the mouse as you can change the colour.
- There are multiple health sensors near the bottom edge of the mouse so that they work for the 4th and 5th and will be suitable for any finger length.
- The touch surface may be difficult to use on an upright mouse as it will not provide any grip so it could feel like the user's hand is slipping.



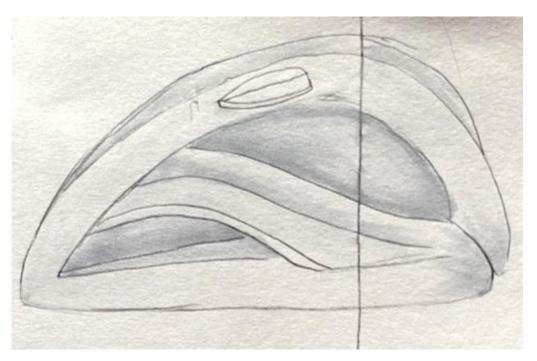
- The buttons will be easy to use as everyone is used to working with this layout, making it user friendly. These could also have a soft grip finish which will help prevent the user's hands from slipping. This however may not eliminate the slipping so a small platform for the pinkie and the side of the hand to rest on may be needed, especially since these fingers will be used for the health monitoring. The design of the buttons is inspired by the Tui's beak.
- The scroll wheel is both very practical but is also a design feature which resembles the Tui's tuff.
- The design is in proportion to a wide range of hand sizes.



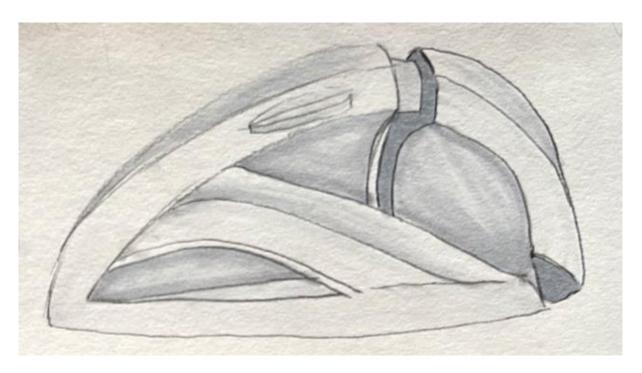




How will the mouse fit different hand sizes?



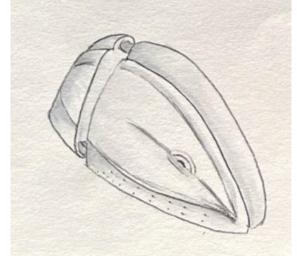
I cut the mouse into two parts, avoiding the scroll wheel, buttons, health sensors and thumb rest.



I wanted to keep the thumb rest in one piece, so I cut it at the base. This keeps the organic flow of the design.

This will ensure that the design is comfortable for all hand sizes.





Back view



This will make the mouse adjustable and multifil for many users.



How will the adjustable mouse work?



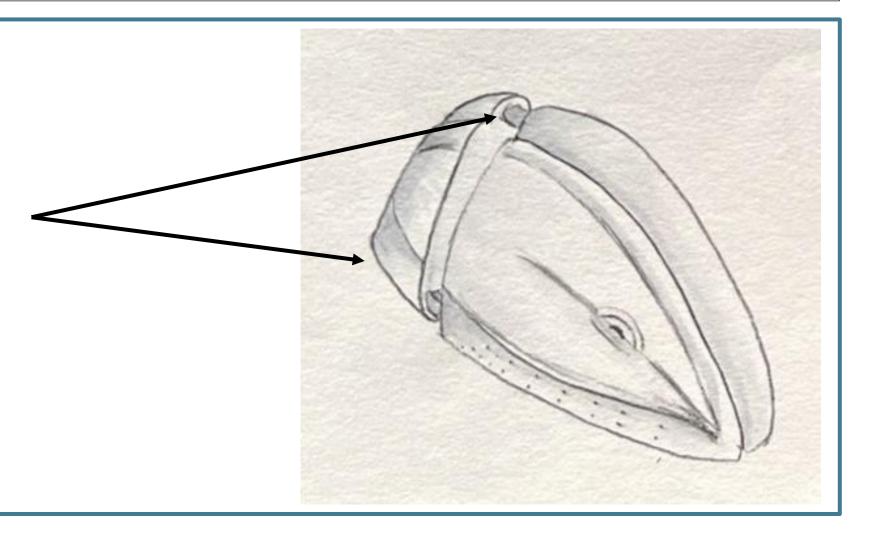


I looked at how a headset adjusted its length by using a slider arm. It is easy to adjust the fit by pulling/pushing it in and out. I am going to use a cylinder slider to adjust the size of the mouse for different hand sizes.

The wires will connect the two parts of the mouse by making the slider a circular shape and running the wires through the hollow inside.



The sliders will be placed at the top and bottom to give the mouse design strength and stability.



Detachable finger rest

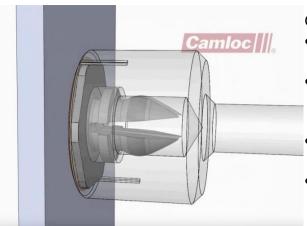




- This adds comfort for the user, especially if their fingers are slipping or rubbing on the table/desk. This also ensures that the user's hand rests in the correct position for the health monitoring to work well.
- The curved, organic shape matches the form of the mouse and is in proportion, so the design looks balanced.
- Enough space has been created in the curve to fit any sized fingers.
- Three fastenings have been added so that the finger rest is stable and sturdy.

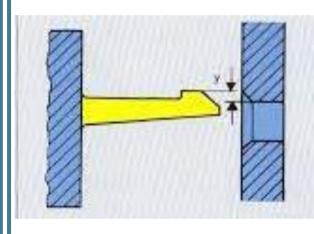


How will they be attached?



Camloc Snap-Fit Fastening

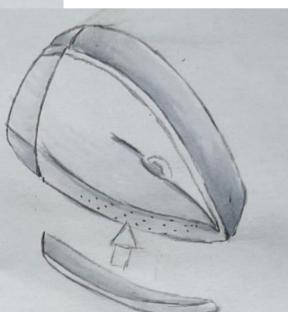
- Highly reliable fastening for use in plastic or composite type materials.
- Holding force and reliability of the connection remains consistent and stable.
- Comes in a variation of colours and sizes.
- Pieces can be easily connection/disconnected by either pressing or pulling.

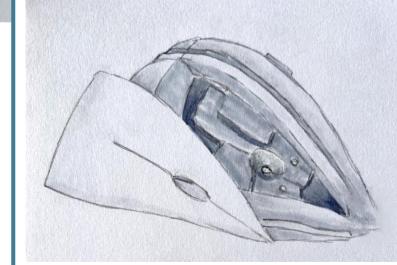


Cantilever snap joint

- Reliable for plastic or composite type materials.
- Flexible and durable.
- The arm needs to be pressed down to release.
- It is effective for joining two separate halves which need to be separated.

I am going to use the Camloc Snap-Fit Fastening for the attachment because it is strong, reliable and easily connected and disconnected. Because it is going to be small, the Cantilever snap joint will be difficult to use because you have to press down on it.





Accessing the interior

- This has been added so that it is easy to get to the technical parts of the mouse so that it can be repaired easily.
- The Camloc Snap-Fit fastenings will be used and added around the outer edge in places that will not disturb the function of the buttons.





USB-C Charging port



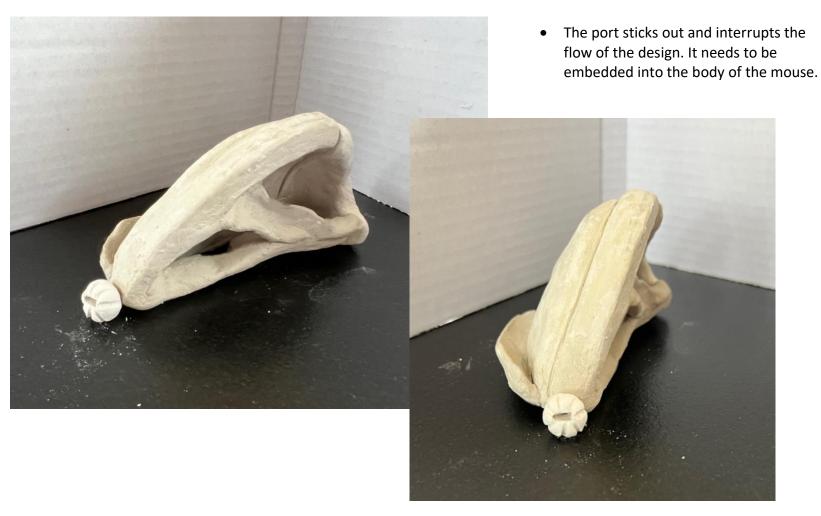




- The charging port will be added at the front of the mouse so that the mouse is still functional while it is being charged with the USB-C connection.
- I have decided to add the charging port as a distinctive tuff-like feature to bring the Tui into the design.
- I am going to add the smallest one to the design because it has the best proportion and adds balance to the mouse.



• This pattern emphasises the texture of the feathers.







Materials

I will use recycled plastics to make the shell of the mouse so that the production of the mouse is sustainable and eco-friendly.

Benefits of plastic: Durable

Light weight enhances the comfort of the device.

Sustainable, versatile, and cost effective.

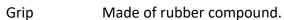
Flexible design – Various colours, surface finishes, textures, which boosts it's

user friendliness.

Shatterproof and non-permeable.

Recyclable can be melted and reused several times.

I am going to make the mouse out of thermal plastic because it is pliable and can be moulded into to the required shape. It is also an excellent insulator, therefore the mouse will help shift the heat which is required for charging the mouse.



It will be made from recycled ground tyre rubber that has had fillers added to make it useable. This will give it a softness that create a nice sensory experience for the user. This product has a stickiness about it to prevent the hand from

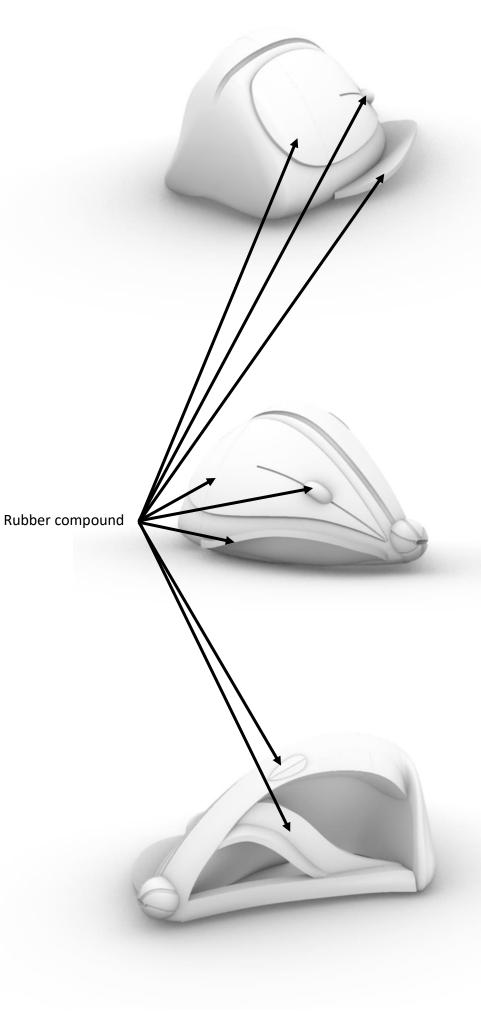
slipping, making it user friendly.

It will have a matte finish so finger and hand marks will not be visible.

Some metal will be required for the interior technical components.











Made from recycled plastic

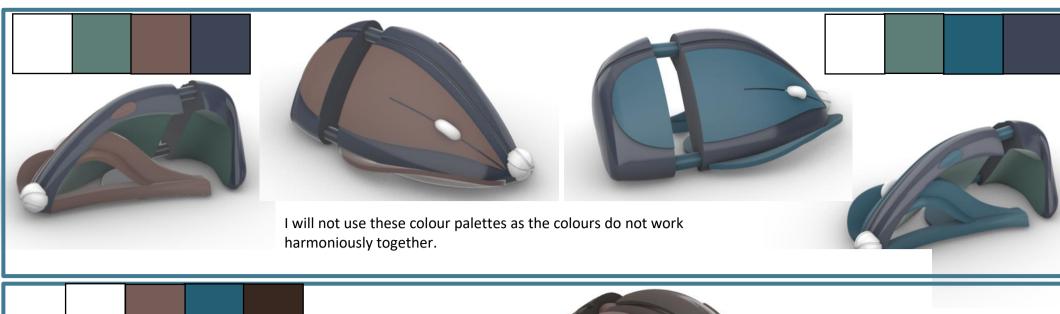
https://www.logitec h.com/ennz/sustainability/po st-consumerrecycledplastic.html

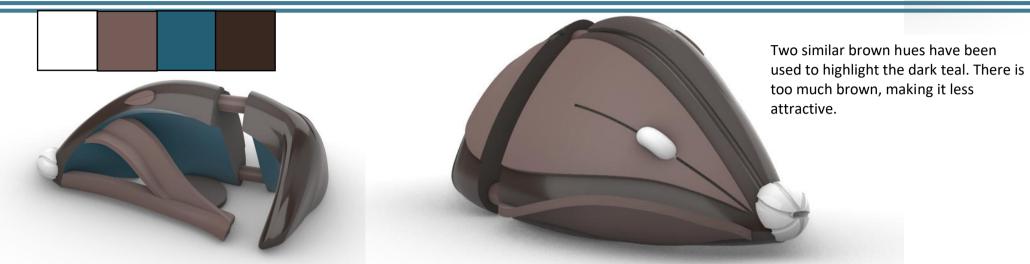


Colours

The design is inspired by the Tui, so I will create colour pallets based on their colours.





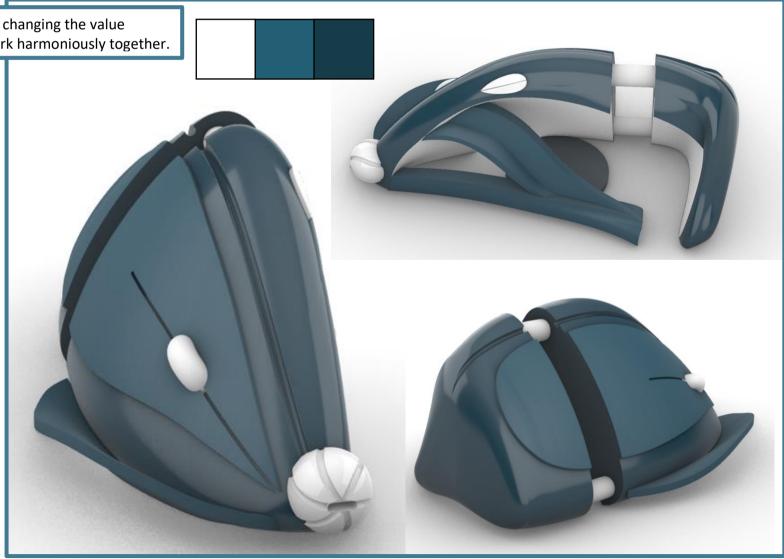




The colours in these designs reflex different amounts of light, making the design appear vibrant and strong. The matte finish contrasts nicely with the shiny finish, making it atheistically pleasing.

These colours would complement any working environment and would create interest on a desk.

I have decided to use the teal toned mouse, as it depicts the Tui colours. The white underside gives impact and makes it modern.



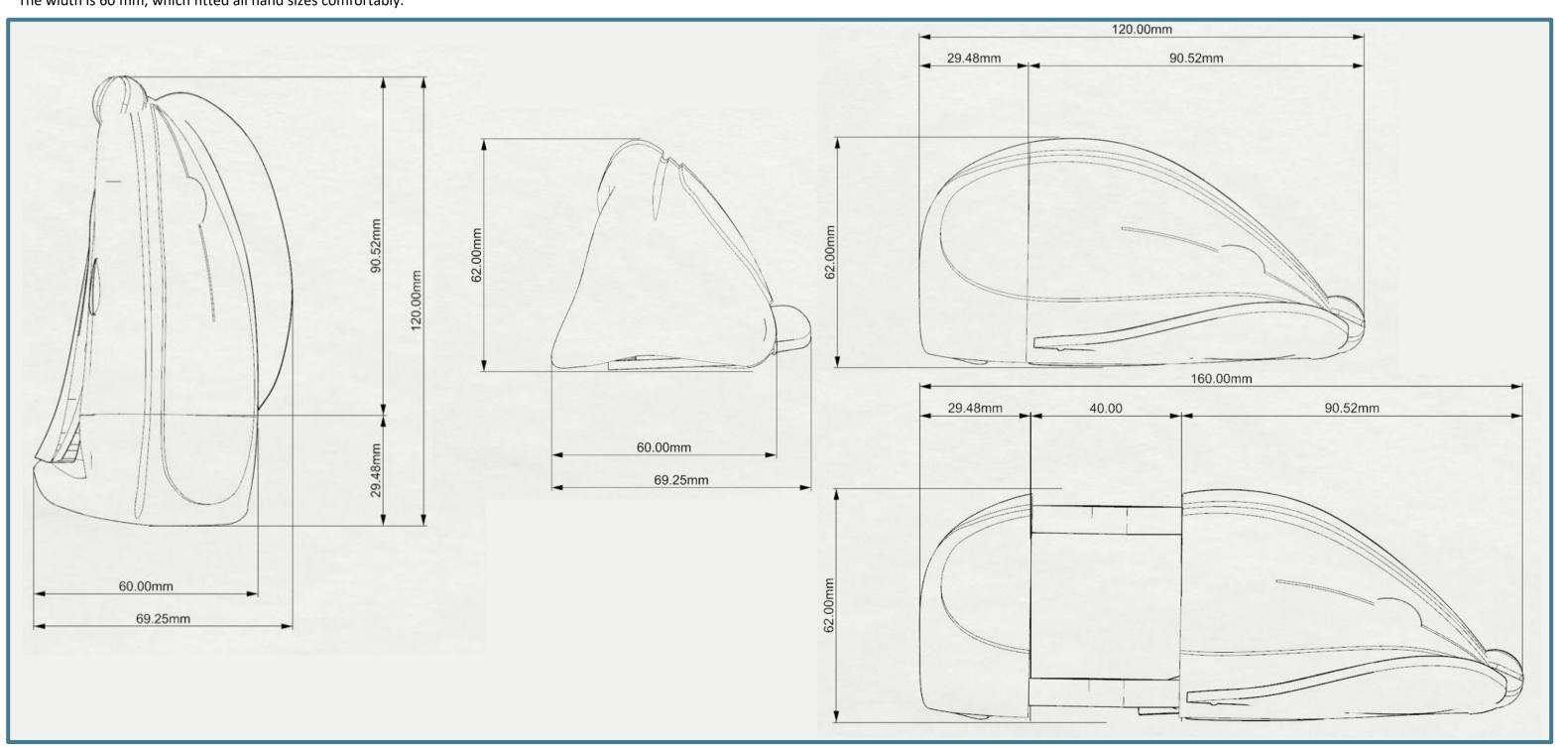
Size







Height of the clay model was 50 mm, but it was too short for the larger hands, so I need to increase the height to 62 mm, based on previous research. The length was 120 mm at its shortest. The mouse will be able to extend to 160 mm, for larger hands. The width is 60 mm, which fitted all hand sizes comfortably.





Brief

Plan and present an exhibition that does not need your presence there.

A product design that speaks for itself.

Plan: Wall/floor space, lighting, and height of display.

How will the viewer interact with the exhibition, the physical space.

The ease of transport of exhibition

Opportunities and constraints

The exhibition space available is the Tamahere Community Centre. I will negotiate with staff where it will be appropriate to display the exhibition. I will need to look at natural/artificial lighting. Any addition lightning has to be supplied by myself.

As the exhibit will be there for a week, I will need to look at locations of power sources.

I will need to consider the distance from viewer to presentation: height.

I will need to consider the type of materials that can be use- must be safe.

The target audience is adults that live in the Tamahere community.

I will need to consider their knowledge base and their expectations.

I will need to consider how the audience will use the presentation.

I will need to think of strategies to draw in the audience.

The design intent of the presentation is to present my DVC work to my target audience.

It must clearly communicate ideas behind my design and my final outcome.

I will need to consider interactivity and outcome being exhibited.

I will need to make decisions on what is most appropriate to present.

The purpose of this presentation is to inform the viewer about a product. It achieves this by having a professional monochromatic colour scheme that enforces a modern seamless design. The focal point is the computer mouse as it is placed using the rule of thirds and the black mouse contrasts with the white background. The viewer can identify with the size of the product and how it is used by the position of the hand as they have put the image in context. Your eye is then drawn up to headline that is in large capitals and is in teal for impact. They've used green as it is a positive colour and its associated with growth and progress. Innovative technology brands that are creating something new often use this colour. Two black horizonal banners have been added at the top and bottom where white text has been used for further information. The top banner is smaller than the bottom banner to give balance to the composition. As the mouse is vertical and is different to what most people use clear diagrams has been used to inform the view why this design is desirable. They have been deliberately placed in the white box with the image of the mouse. Teal has been cleverly added to these diagrams to stress how this mouse design works. This presentation leaves me with wanting to go and see the mouse physically and if it would be suitable for my sized hand and then possibly a purchase.





Again, the purpose of this presentation is to inform the viewer about a product. The focal point is the model that has been positioned on a desk to give the viewer a 3-dimensional view of the product that they can examine closely. This draws interest and showcases the work. A poster has been hung in the background where additional information can be read. The size of the model is well proportioned and sits on the small desk in it's environment. so the viewer can visualise it's intended use. The desk has room for additional items which makes it's cluttered. I think there is enough information on the poster that these items are not necessary. The posters focal point is the product has it is the largest image on the page and is positioned using rule of thirds. Two other images of different angles support this image. The orientation seems disorganised and cluttered making it hard to view. White space hasn't been used effectively to make the product standout. The colour scheme is cohesive, different tones of green/blue to make it appealing and keep within the nature theme. But it isn't striking and doesn't hold your attention. The brand name is positioned top left and doesn't standout. The text is small and hard to read. This exhibition leaves me new knowledge of a product but probably hasn't left a lasting memory.

The intent of this poster is to grab the viewers' attention, give them a minimal amount of information so it will entice them to seek more information and hopefully purchase product. This presentation is minimalistic, sophisticated and has immediate visual impact by being predominately black. The focal point is the blue and green LED light in the centre which draws the views eyes in closer for more detail. The black mouse cleverly blends in with the background to really make you take notice. Your eye is then drawn to the right to the text which is a stark contrast in white. Hierarchy is used within the text to inform the viewer of the name, features and brand.

The block of text is aligned to the left. This gives it a sharp and ordered appearance. The text is legible. All the text are in capitals and the same font, but with differing size and weight. Leading has been used effectively to give the text balance. The purple text matches nicely with the logo adding continuity.

Negative space has been effectively used to make the product standout. The white lines of different weights balance the text and orientates the whole composition.

This posters/advertiment leaves me with a positive feeling of wanting to learn more about this new product.





This exhibition is displayed on a portable display board. These are easy to transport, assemble and use little space.

The intent of this exhibition is to be eye catching so people will stop and view it more closely. This is achieved by the focal point being a large image of the product in green with a vibrant yellow background. It immediately gives warmth and playfulness to the design. The use of negative space around the product also makes it stand out. Your eye is then lead to the left to a picturesque scene showing where you can use this product. It gives the viewer a sense of fun and happiness. The title 'PLAY LIKE A PRO' is in capitals and bold and makes you think, if I bought this product would it potentially improve my game? The three separate compositions are sized and oriented well to form a well put together composition. The text box at the bottom is legible and clearly set out. This display board leaves me with a feeling of golf being a game I might like to try.

This exhibition has been displayed on a folding board which can be used in different settings and spaces. Folding boards can make the display eye-catching and inviting by creates a personal space where the view can spend time viewing in closer detail.

This focal point of this architectural exhibition from a distance is the A2 image of buildings that are light up with a sunset in the background creating a sense of appeal and luxury. The viewer can also see how the building works in its size and context. This potentially will draw the viewer in for a closer look in detail. The other A2 posters look professional, on white paper with clear images and text. They are placed at a good height for people to view.





This poster is like the mouse in that its intent is to grab the viewers' attention. It is modern, minimalistic, and sophisticated. The focal point is the watch in the middle, its face deliberately colourful, showing the many features, to make you look. It is placed using rule of thirds for impact. The proximity of the 3 watches to each other is pleasing to the eye as are the harmonious colours used. White space makes the watches appear like they are coming towards you, floating, enticing you to take one. The use of different coloured watched suggested to the viewer that there are many colour to available to suit your style. This is reflected in the catch phrase too. The text box is centre at the top of the posers and uses hierarchy. A catch phrase has been used which is in capital letters. More information has been given in lower case that is minimal. Leading has been used to separate the catch phrase and further information to make it looked professional. A pale digital lavender, Pantone colour of the 2023, has been used in the background which blends harmoniously with the composition. This poster is memorable and makes you feel like you would like to own one.

• Less is more: Don't cram the page with unnecessary information.

Have a focal point and work around that.

- Embrace white space: Allowing the viewer to focus easily on the presentation.
- Typography: Needs to compliment the design.
- What will the viewer take from the design? Don't just want it to look good.

Needs to focus on the purpose.

- High quality, clear images.
- Know the space: Lighting

Size of the room

Viewing areas

Natural focal points

• What will attract the audience to the design?

"You can have an art experience in front of Rembrandt... or in front of a piece of graphic design."

-Stefan Sagmeister

"Design is first and foremost a tool that, at best, tries to help people improve their lives."

-Philippe Starck

Designers I have looked at:

Philippe Starck Stefan Sagmeister Jessica Walsh Jason Santa Maria

Tamahere Community Centre

Possible locations:

Option 1

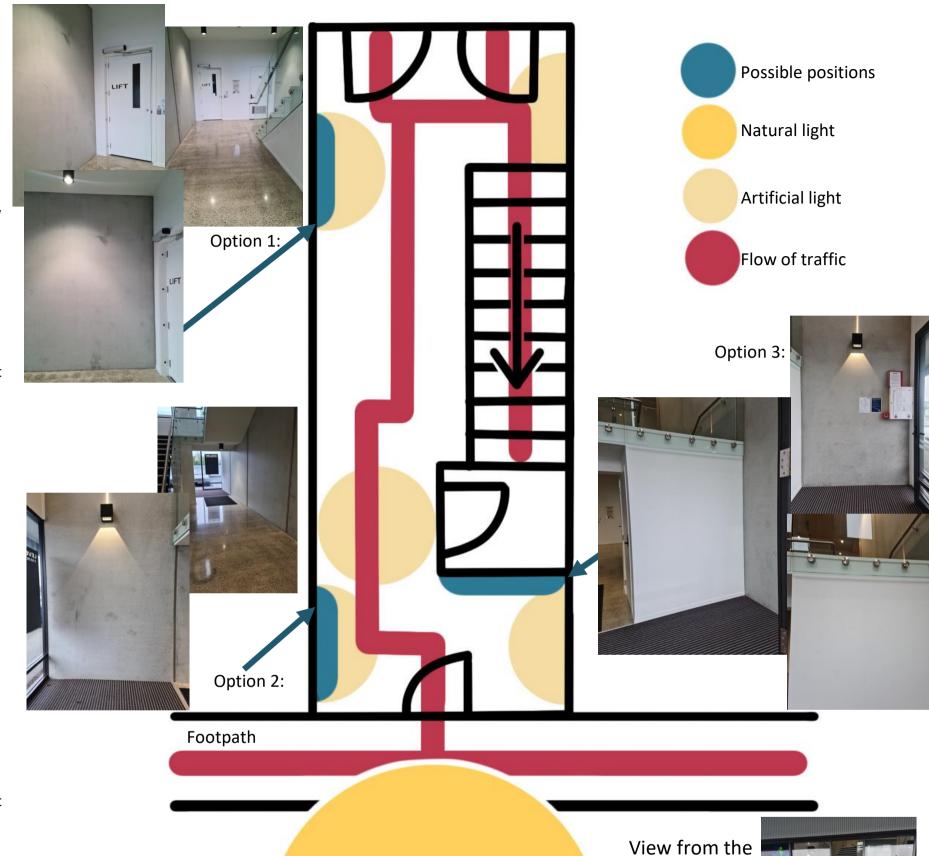
- + The height of the roof would allow parts of the exhibition to be hung.
- +Is well light with artificial and natural light. A spotlight shines onto the wall where the exhibition could possibly be positioned.
- It is right in front of the lift, so the exhibition would be limited to posters so that it does not interfere with the flow of traffic.
- There are no power points so it would be difficult to add a digital element to the exhibition.

Option 2

- + There is both plenty of natural and artificial light, so no additional lights would be necessary.
- + There is space for a small table/plinth to be placed so that it isn't in the way.
- + The concrete (light grey colour) of the wall will go with any colours.
- + The flow of traffic will guide people visiting the community centre to view my exhibition.
- There is a high celling, so the exhibition will not be able to be hung.
- There are no power points so it would be difficult to add a digital element to the exhibition.

Option 3

- + This space is out of the way, so viewers will not obstruct the traffic flow.
- + No extra lightning will be need because there is enough natural and artificial lighting.
- + The white wall will make any colours in the exhibition standout.
- + This placement can easily be seen from outside and when people walk into the building
- + There is space for a small table/plinth to be placed so that it isn't in the way.
- If one of the main colours of the poster is white, then the poster may not stand out.
- There are no power points so it would be difficult to add a digital element to the exhibition.



Chosen location: I have chosen to place my design exhibition in the Tamahere Community Centres entrance way as opposed to being in the office of the centre as it will be less cramped. It will be exposed to a larger and more diverse range of people passing through each day.

I have chosen to look further into options 2 and 3 as they both have more space for people to view than option 1. They also have better lighting and are at the entranceway so people will be able to see them from the footpath.

Entrance for staff and members of the public.

road/foot path

To Present

Could include:

High quality images

Multiple views of 3d model

Possibly drawings

Inspiration process.

A sequence of development of product.

Symbols and images to convey messages.

Name of design.

Indication of what the product is and how it is used.

Highlight points of interest, how it is used and what makes it different.

Present it as a professional, modern design.



How to engage the viewers

Visual interest

Colours, images, layout, hierarchy Keep the design simple, and clear

Information

Easy to read, understandable Select appropriate typography

Show how the product is different

Headline needs to grab attention



Building manager

Can hang anything on the wall as long as it does not leave any damage. So, I cannot use nails, hooks, etc.

As I will not be present at the exhibition, they said I cannot use a table/plinth as it may obstruct the traffic flow.

Display board/banner

Easily to transport, assemble and takes up little space.

Information is displayed in one place.

It can be positioned where needed.

It stands out from the wall, so it is engaging.

Expensive.

Brochure

Can provide a lot of information.

Is quite small and can be unimpressive.

Easily portable.

Can be viewed after the exhibition is finished.

Cheap.

Folding board

Can be eye catching and encourage people into a space

to

view closer.

Takes up a lot of room.

As it is large so it would be difficult to transport it to the

site.

Used to show a lot of information to the viewer.

Posters/boards

One large, or a combination of different sizes.

Simple and effective.

Information is displayed in one place.

Easy to install and remove.

Relatively cheap to make depending on size.

Hanging posters

Potentially a safety hazard.

Eye catching.

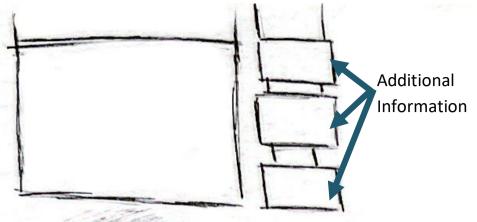
Open space is used effectively as it is not limited to wall space

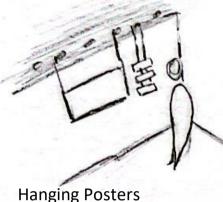
This will need something secure to hand it from.

IM E T H O D

Presentation

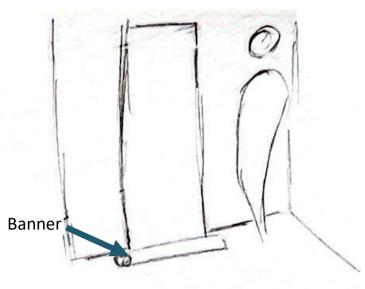
Of





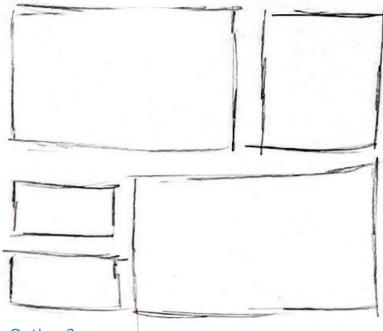
Option 1

- + They stand out from the wall, so they will catch the viewer's attention.
- + There is clearly a dominant poster, so the viewer will know where to look first.
- + The white wall will provide a professional backdrop
- Additional information is grouped together on a different hanger, which makes the display appear disjointed.
- They may move with the wind as they are positioned close to the entrance.



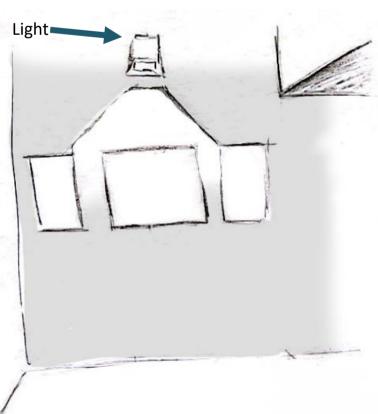
Option 2

- + The banner can be positioned anywhere.
- + It stands out from the wall.
- + All the information is displayed in one place.
- The information at the bottom will be very difficult to read.



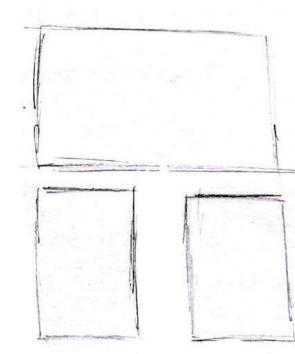
Option 3

- + Varying size gives an interesting effect. Smaller sized boards can be used for additional information.
- + All the boards fit into a uniform rectangle shape, which gives it a professional look.
- + This layout will work well in this space and will now interfere with traffic flow.
- There are possibly too many boards which could make it hard to display the information simply. Not eye catching. There is no board that is more dominant than the others, so the viewer may not know where to look first.



Option 4

- + The three poster boards are centred with the light above the landscape poster. This draws the viewer attention to this poster.
- + The two smaller boards could display additional information.
- + All of the boards are at eye level so the viewer will easily be able to read the information.
- + All of the boards are nicely in line, so the display looks professional.
- + This layout will work well in this space and will now interfere with traffic flow.
- + The concrete wall will provide a modern backdrop



Option 5

+ The landscape board is more dominant than the others which is eye catching.

The viewers eye will then be led down to the two portrait boards for further information.

- + All the boards fit into a uniform rectangle shape, which gives it —a professional look.
- + The combination of three boards in visually appealing.
- + This layout will work well in this space and will now interfere with traffic flow.
- The lower boards may be more difficult to read as they might not be at eye level.

Size and Dimensions Size of the Display Wall



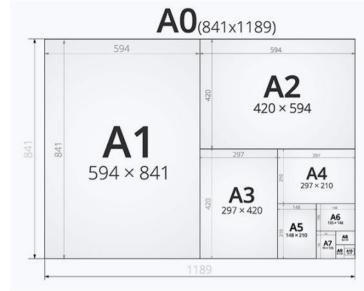
The standard hight for poster boards is 1450 mm (from the centre of the board to the floor). This reflects the eye level of an average person.

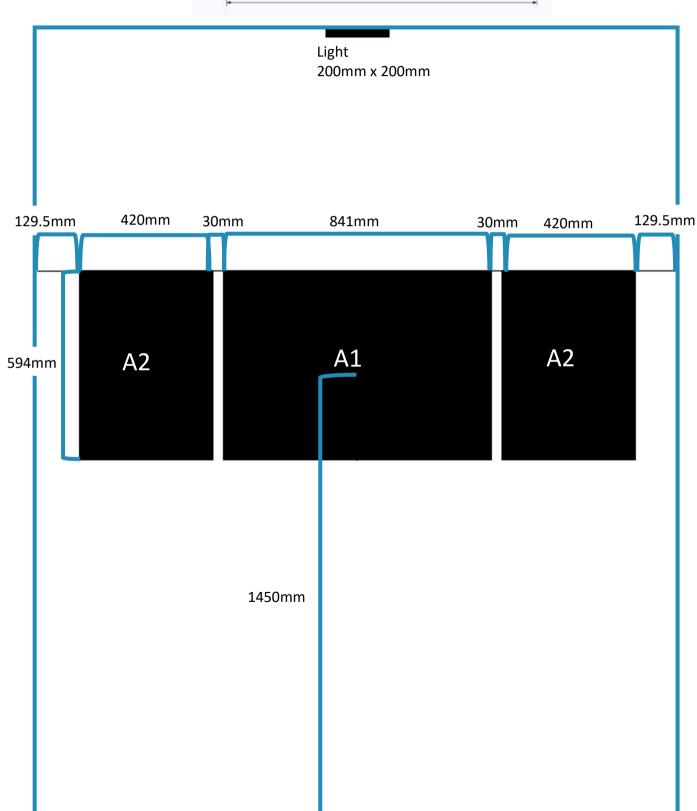


There is space to view the display.

I have decided to go with option 4 as it fits into the entranceway nicely. The light is centred and will draw the viewers' attention towards the display, especially the central board.

The concrete wall will create a modern backdrop for the display.





Name and Typography

Mouse Name:

Bio Mouse:

Fits you and measures you; Bio biology, personalized so it fits you and measures you.

Persona Mouse, Uni Mouse, Symbiotic Mouse, Liken Mouse:

It fits you, it monitors you and you charge it.

Tui Mouse:

The inspiration of the mouse.

I have chosen to use 'Bio Mouse' as it is an innovative product designed to be adjustable and multipurpose.

Chosen Fonts:

Bio Mouse

Body Text

Typography:

Body typeface:

Times New Roman: It is a serif typeface. I like this font as it is traditional but it's hard to read on a poster. Also, it is used widely in everyday life so it's not eye caching enough for my design.

Open sans: It is a sans serif typeface. It is clean and modern and works well on large posters. It is very readable in a small size and is luxurious so would work well for my content. It is however used a lot, which may detract from the design.

Montserrat: Like open sans it is a sans serif typeface. It's a clean, circular font which is very legible. Because it is circular it fits nicely with my mouse design. It is easy to read at any size.

Arvo: It is a geometric slab-serif typeface suited for screens. It has great legibility in a variety of context. It is also modern and produces cleanliness in a poster design. This is a great font, but I don't think it fits in with my product design.

Quattrocento: Roman typeface that is elegant, classical and strong. It is legible and works well for small sizes in body text.

I am going to explore the use of Montserrat for my poster as it will compliment my product design.

Montserrat

Title typeface:

Roundhand: Bio Mouse

Bree: Bio Mouse

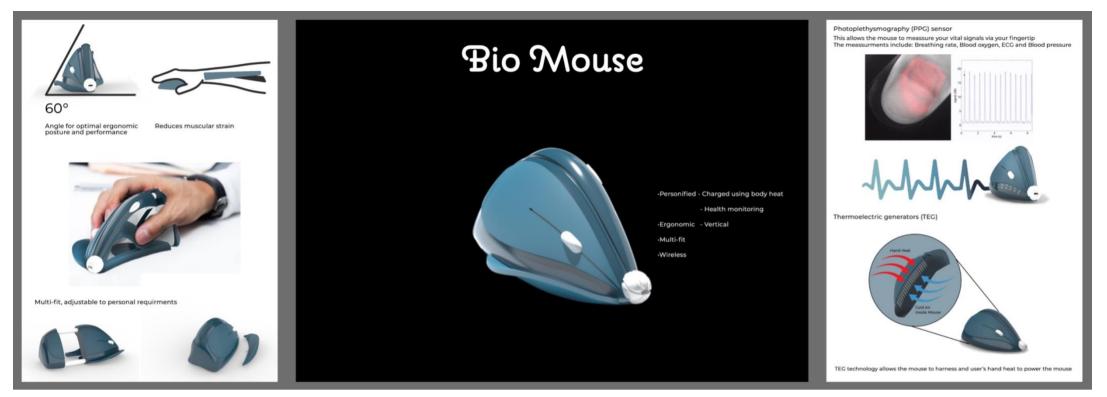
Tenby: Bio Mouse

Pauline: Bio Mouse

Ice Cream: Bio Mouse

I have decided to use Pauline as it fits nicely with the rounded body text. It also nicely compliments the organic design of the mouse.

Layout



- The image of the mouse in use needs to take up a whole board as it shows how it works. The image shows it is a vertical/ergonomic mouse so I do not need the two images at the top of the left board.
- The middle board does not grab your attention. I could possibly use the image of the mouse in use as the central board and then have another image of the mouse in the environment it will be used in.
- There needs to be minimal text.
- I need to remove the top half of the right page as it is too confusing.
- The bottom image showing the heat charging is visually informative. I could label it showing where the PPG sensor and detachable finger rest is on the same image.
- The header font does not fit with the minimalist type board, so I will try other fonts.



- I have created an image of the product in use in its environment and have enlarged it to take up the whole first board.
- For the middle board the background is replaced with white to create contrast and make the mouse standout. This makes it more modern and sophisticated. I used rule of thirds to place the three mice and this created a nice proximity to each other that was balanced and harmonious. I wanted the centre mouse to be the focal point, so I enlarged it. I keep the other two mouses the same size for balance. The white space created a crisp minimalistic composition. The font isn't right so will research further.
- The right board has an image of the mouse in use at the top so the viewer can see how it fits the hand. A detailed diagram of the components of the mouse is position at the bottom to give the viewer more precise information. I think this board needs to be divided in half to separate the 2 images to give them more individual impact. The font used in the diagram works well but it may need to be more bold to be legible as it is going to be read from a distance.



- I decided to go with the Tenby Font for the 'Bio-Mouse' as it is rounded to suit the organic mouse design but has a geometric display that works well for technology products.
- I separated the right board (making them two) and it has given them both their own identity. They are more eye catching and it's given balance to all three boards.
- To make the left board flow with the other two boards better I'm going to tone down the wooden desk as it's too bright and make the wall whiter.
- The black 'Bio-Mouse' works well with the first board's black objects.



- The boards now complement each other.
- The diagram font is more legible
- I photoshopped an image of the tui onto the computer screen to subtly show my design inspiration. I enhanced the tuis feathers so they complemented the mouse colours which again brought all the boards together.

Layout



I explored text colour for my title text. Blue pairs well with most colours, including vibrant hues like orange and red, and more muted colours like grey and beige.

The smaller text by the diagram will be black on the white background, making it highly visible and readable.



These are complimentary colours, so they make each other look brighter.



Beige to continue the organic theme. This colour blends with the product.



The black title works with the boards but as it is an innovative product, I think a modern colour would create a more cohesive look with my product.



I took the green from the background of the tui image. Blue and green go well together because they have blue in common. It is a natural tone and links the boards together. It is bright but doesn't take away from the product. Green represents nature which goes well with my inspiration, the Tui.

I have decided to use this colour

Colour



- I have extended the grey background colour of the left boards onto the other boards so that they flow and work together. In the infographic board the description of the TEG has been left white to emphasis an important function. I have also extended the desk to link the two boards so the lines lead the eye to the focal point of the large mouse and the shape links the four boards providing balance.
- The title Bio-Mouse has been divided over the first 2 boards again make the display continuous. It has been placed near the bottom to give the product space and not steel from the focal point being the larger mouse,
- I have added a curved shape that matches the mouse's design which crosses the two right boards to create balance. I have made it have a wooden texture which matches the desk. This makes it difficult to read the text on the diagram and does not give the boards a professional feel.
- The infographic board does not have an even boarder, which makes the board feel crammed into the space.
- The overlay of the title on the large central image feels unnatural and doesn't show off the product.
- I moved the image of the mouse in use, to the central board, as it is more informative, By placing the two images together it has created a distinct contrast, juxtaposition.



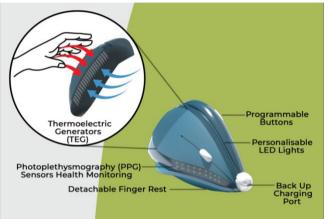
- I have moved the large mouse image higher and further to the left so that it does not overlap the text and is further away from the mouse with the hand. This has created negative space allowed the mouse to be more defined creating a focal point.
- I have changed the colour of the shape on the right boards to the same green as the text and the Tui image. This links the boards together and gives a more professional look.
- I have replaced the bottom right image on the top right board with a better-quality image, so that once the boards are printed the image will be clear.
- The text on the infographic board has been enlarged to make it more legible. A margin has been created around the outside of the images so they don't look like they're falling off the board.





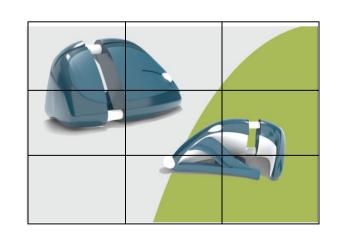


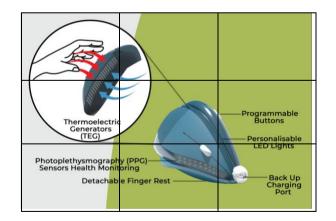




- I have used proximity by flipping the two images of the mouse on the centre board to create a better relationship between them, the title and desk. They have also been enlarged to create visual hierarchy, so the viewer knows what order to look at them, and what's the most important element to focus on. I used rule of thirds to position the mouse images to create interest and draw the views eye to the focal point. The front of the mouse points at the name. This layout is now balance and is pleasing to view.
- The negative space on the three boards allows the viewer to focus easily on the elements presented.
- The images of the product over the 4 boards allows the viewer to see the function and characteristics of the design.







Construction

Foam board: + Light weight

- + Made of three layers- inner layer of dense foam that is coated on either side with a thin smooth cardboard
- + Suitable for indoor use and short-term displays
- + Inexpensive



Corflute: + Sturdier than foam board

- + Rigid, light weight and waterproof
- + Design is printed onto the corflute sheet
- Ridges are sometimes visible through the print
- More expensive than foam board



I have decided to use the foam board as it will suit my short-term presentation at the Tamahere Community centre. It will be easy to transport and hang in the space as it is very lightweight and will not require extra-strength hanging mechanisms.

To construct my design, I will print each page and attach the paper to the foam board using an adhesive spray. I will then attach the boards in the correct position to the concrete wall using poster strips. When the boards are removed the wall will not be damaged.



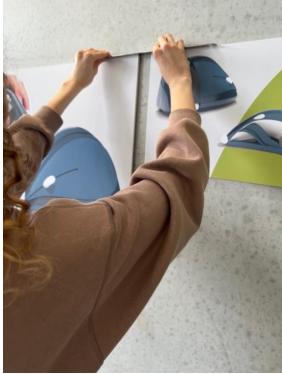


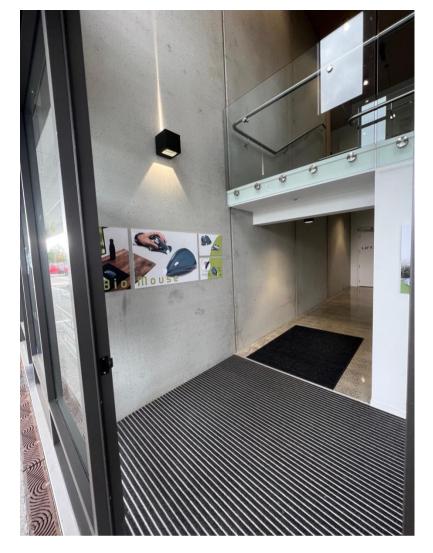


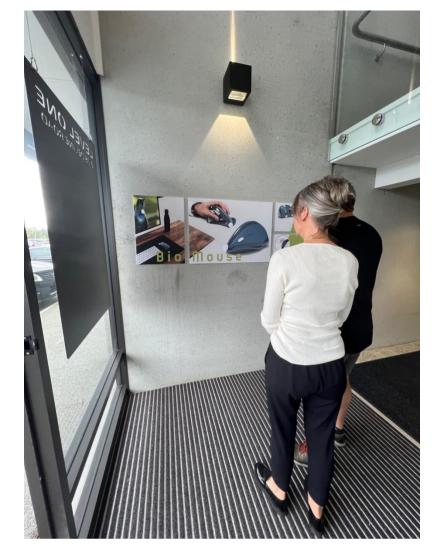




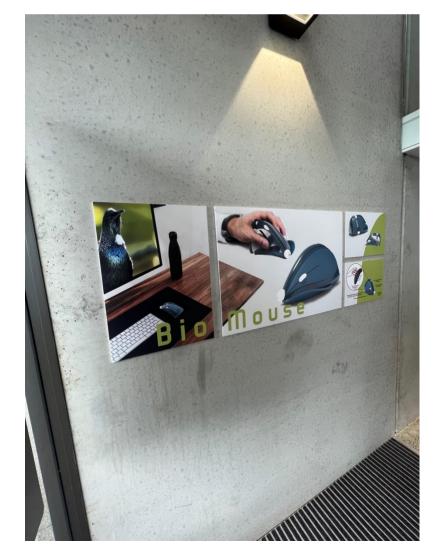












Audience Feedback:

Name: Jen Burnley (Retired women who lives in the Tamahere Community)

I was coming to an appointment at the Tamahere Community Centre when your exhibition caught my eye as I was entering the building. I had to stop and look at it further. I am a retired teacher so really enjoyed seeing your work. I could clearly see that it was an innovative mouse that was adjustable, ergonomic and had health monitoring features. I was fascinated how the hand heat could charge the mouse. The use of colour suited the images, and the text was easy to read. I love Tuis and could see how they inspired your design. I would really like to use a mouse like this and have it sitting on my desk. It looks like a piece of art. Fantastic exhibition.

Name: Lily Glover (Student who lives with her family in the Tamahere Community)

As I entered the Community Centre, I was immediately drawn to the large image of the mouse on the centre board. I stopped to looked at it further as it was different to other mouse. I could clearly see that the Tui inspired the design. The high-quality images showed me it's features and how it worked. The exhibition looked great on the concrete wall, the colours and text worked well with the product. I would definitely like to try a mouse like this especially its ergonomic design as I spend a lot of time on the computer. I also liked how you could charge it with your hand heat.

Evaluation: I chose to use the poster board format for my exhibition as it is the perfect size for the

- I chose to use the poster board format for my exhibition as it is the perfect size for the
 physical space. It is also a simple and effective way of communicating my design. I decided to
 use four boards of different sizes that show the viewer more detail and information than
 what could be shown on a single board.
- The exhibition is placed at the entrance way to the Tamahere Community Centre where it effectively captures the target audience as they walk through. The display does not interfere with the flow of traffic and there is enough space for people to stop and looked at it more closely. The A1 centre board is aligned so the artificial light shines down on the focal point of the large mouse. This works well as it made the mouse stand out even more. The nature light is bright, making all four boards easy to view. The colours used on the boards compliments the grey concrete. The text is legible from 1.5 metres away so could easily be read by the target adult audience. The height of the boards are positioned at eye level for the average adult person, as they are the target audience, so it was easy to view.
- When working through my exhibition I considered the knowledge and comments of the
 designers I looked at and I feel that I have used them accordingly; less is more, have a focal
 point and work around it, embrace white space, typography needs to compliment the design,
 high quality images, knowing the space, what will attract the audience, purpose of display.
- The A1 central board has the focal point of the large mouse accompanied by a smaller mouse in use from a different view. The A2 left board features the product in its environments. The third board show the adjustability feature of the mouse and the fourth board is an infographic that show the features in detail. These four boards are set in a grid and work together to highlight the products points of interest, how it is used and what makes it different.
- Scale, rule of thirds and proximity has been considered when placing the images and has produced balance to the whole composition. The design inspiration, the Tui, has been cleverly placed in the computer screen. The title Bio Mouse overlays the first two boards creating connection and flow. It has been positioned near the bottom to give the product space and not steal the focal point. The natural green from the Tui image has been used in the title to compliment the blue of the mouse. The use of a continuous grey background also connects the four boards. The third and fourth boards have a curved green shape that matches the mouse's organic design to connect the two right boards creating balance and harmony to the overall composition.
- The composition is simple, "Less is More', and uses white space well to define the product which allows the viewer to focus on the presentation and its purpose of informing an adult audience about a new innovative product.
- The high-quality, clear images of multiple views of 3D models used are important so the viewer can see the whole design and the many different features effectively.
- The font chosen, Tenby, for the title is rounded to suit the organic mouse design and has a geometric display that works well for technological products, therefore it complements the design. The infographic font, Montserrat, is clean and legible from a distance.
- I believe I have effectively produced a visual exhibition that is professional, modern, and appealing and one that informs my target audience, adults that live in the community, about the Bio Mouse. The size and placement of the exhibition worked well in the space as it creates a relationship between the design and the viewer.









