

Increasing assessor confidence when making assessment judgements at all levels

AS91356. Develop a conceptual design for an outcome.

AS91610. Develop a conceptual design considering fitness for purpose in the broadest sense.

The Basic Requirements

2.3 and 3.3. The intent of this standard is to encourage the exploration of a range of aesthetic and functional features for a unique conceptual design. Evidence of the following is needed.

- An authentic brief that encourages innovation and exploration beyond the basic features expected for an outcome
- Feedback from a range of stakeholders
- Development of a range of unique, unbiased ideas
- Research and functional modelling that specifically explore aesthetics and function
- Application of evaluated results from research and functional modelling that inform the selection of the aesthetic and functional features
- Decision making
- A final conceptual design
- Explanation of the potential of the proposed outcome to meet the brief

Evidence should include

- Interactions with more than one stakeholder
- Analysis and understanding of the requirements of the social and physical environment
- Measurable specifications

Not needed

- Exploration and selection of practical techniques and equipment.
- Evidence of planning or project management, cutting lists or costings.
- A finished, physical, tangible outcome is not expected for these standards.

Although students may go on to produce the prototype or the final technological outcome itself, these are not required for this standard.

Differences between Level 2 to 3

91356

When assessing L2, ask yourself is this evidence representative of L7 of the Technology curriculum

Student must explain the outcome's potential Fitness for Purpose

91610

L3 – ask yourself is this evidence representative of Level 8 of the Technology curriculum.

Students must explain the outcome's potential Fitness for Purpose and the fitness for purpose of the practices used to develop it. This is what is known as fitness for purpose in the broadest sense.

Context Considerations

At Level 2 the standard does not explicitly ask for context considerations but a student who is undertaking sound technological practice will likely show evidence which reveals they understand the needs of the immediate environment where the conceptual design would be located alongside the ways people could be affected by the design. At Level 3 context considerations must be overt especially for Excellence as EN3 refers to the wider social and physical environment in which the technological development occurs.

The wider physical environment relates to the elements within the natural or man-made spaces where the conceptual design will be located. As the student develops their conceptual design they could perhaps

- Ascertain the dimensions of a space where the outcome will be used and potentially stored when not in use
- Research the local climate or weather to determine factors that may affect an outcome - outdoor furniture
- Map out the physical environment where the outcome may be placed - grass, concrete etc
- Determine any safe practices that should be considered as the outcome is being used.

The wider social environment relates to the human factor and social acceptability. For example,



- Researching, comparing and evaluating suitable outcomes to ascertain what is currently on trend and not on trend
- consideration for ergonomics
- Discussing with mana whenua any protocols (tikanga) that might need to be considered
- Considering how the developing design could be deconstructed to allow for easy repair which makes for a more sustainable concept etc

Don't overlook the evidence of wider context considerations related to the school environment e.g. the workshop



Ensure the students are only exploring the context considerations that are relevant to their developing outcome.

The person who will use it	A tradie or me shown in these two photos.	 <p>Tradie</p>  <p>Me</p>
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Location <i>(where it will be used)</i>	Foleys on hooker valley crescent In these photos I am showing an example of what conditions this bag will be used in.	 
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_____ is a Mexican themed restaurant in XXXXXXXX, a town known for its shopping and restaurants. It is a destination for tourists and locals who are mostly professionals and their families or retirees.

_____ is a very busy restaurant for all ages. It's a place where you can try new foods inspired by Mexican cuisine. As you can see from the photo it's a very social place to hang with friends and partners, it isn't as much of a family restaurant like McDonalds where kids are free to run around outside and play _____ is more of a mature restaurant that sells various alcoholic beverages, it's a place where you don't spend too much time (don't stay for longer than 1.5 hours). It is eclectic and bright and usually very crowded with people of all ages.



Things I will have to consider about the social environment when designing a garment for wearing to _____ is

- A style that is not too revealing because all age groups go there.
- Easy to move in as the restaurant is very small and always busy with lots of people moving around and seated close by.
- Lots of people I know go there. I want to be on trend and look stylish

Things I will have to consider about the physical environment when designing a garment for wearing to _____ is

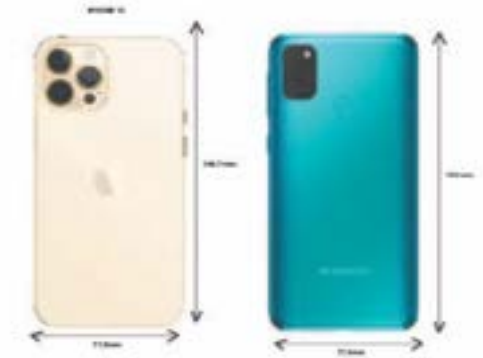
- Something warm as there isn't much room for a big jacket and we might be sitting outside. The doors are also often opening and closing as people come and go all the time.
- Easy to go to the bathroom.
- Washable - the food is Mexican finger food like tacos and fries which can be quite messy

The evidence of context considerations should be **woven throughout the work**, not just introduced at the beginning of the folio or summarised at the end of the journey. At Excellence, the wider context considerations and the needs of the wider social and physical environment would clearly underpin all the student does and often they will be integrated into the student specifications. Evidence of wider context considerations, measurable specifications and fitness for purpose often evolve together when the work is truly indicative of Excellence.

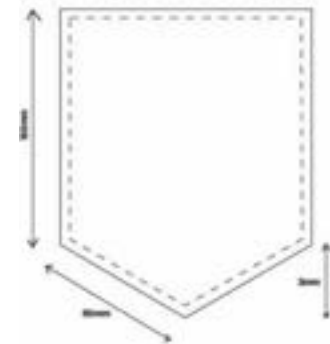
Research

A key criteria for Excellence is evidence of ongoing research. As an assessor when you are looking at the student's research ask yourself these questions before making a judgement of Excellence.

- Has the research focussed on the function and aesthetic of existing solutions?
- What is the purpose of the research? is it relevant? Does it add depth to the evidence?
- Has the ongoing research resulted in the student making small modifications or tweaks to their developing design? Generally initial research will be quite broad but as the design develops the research will be more targeted and reveal refined thinking.
- Has the student used a range of sources? while this is not a requirement for the standard, good technological practice would see students collecting data or evidence for analysis using a range of methods. For example, case studies or surveys.
- Is the research analysed and evaluated? This is a requirement for Achievement at both levels.



I designed the back pocket size for both the shorts and the wide leg pants to be as useful as possible. When designing the pocket I kept in mind the fact that many people want to put their phones in their pockets. I researched the size of an iPhone 12 as its the newest apple phone and the size of the newest Samsung phone. I figured that if i designed for a larger size phone than it would make more sense, if the pocket fits larger phone designs than it will fit smaller phones. Meaning that it will fit most phone easily in the pocket.



In this example the specification being addressed here is the need for the stakeholder to be able to secure a phone inside a garment. The evidence shows the student has refined a conceptual design for a pocket and that design is clearly informed by research into size and shape.

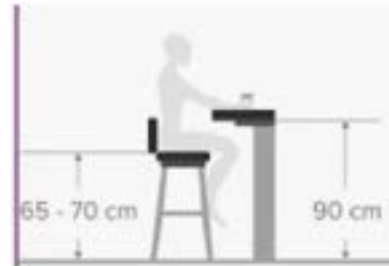
This barstool will be used for a breakfast bar in the kitchen. The kitchen is a traditional shaker style in a grey blue colour called pearl. The bench top is honed marble. It is a very simple design and traditional in style

" The defining principle of Shaker design is that function comes before all else. For this reason, this style of furniture consists mainly of straightforward, wooden pieces. There is also an emphasis on maintaining clean lines and avoiding it being too decorative.

That's not to say that Shaker work is devoid of its own brand of sophistication. You can often see slight decorative flourishes in the furniture's elegantly turned legs and in small, detailed carvings in the wood. These carvings often depicted things like leaves or acorns." source

<https://freshome.com/inspiration/the-defining-a-style-series-what-is-shaker-design-the-key-to-timeless-design/>

The image here shows the recommended height of bar stools to the kitchen bench. You don't want the stool to be so tall or short that the person is hunched or must stretch, and I have learned that the bar stool needs to be 200 mm lower than the bench. For the height of the bar stool to fit under the breakfast bar which is 900 mm high my bar stool will need to be 700mm high .



All these stools are unsophisticated and have a flat square seat and flat square legs. The thinner shaped legs would not be so stable or safe or strong. Two have a back which is a better design for people when sitting for long periods of time. The natural wood that has not been stained or painted so don't look as durable and look unfinished, but this could also be a place where a carving could go, maybe a leaf or flower. Painting or staining could also improve the looks. XXXX said that these have a simple, timeless appearance to them which might not be suited to the modern kitchen space. He suggested I look at rounded edges instead of square.

This extract of research from a student folio contributed towards an overall grade of Excellence. It reveals research that considers fitness for purpose in the broadest sense and wider context considerations. The student is developing a conceptual design for a bar stool, and they have undertaken targeted research into the design style that best fitted the aesthetic of the stakeholder's kitchen which ultimately helped them to determine some key considerations for their developing design. The student did further (ongoing) research at a local market and this reveals thinking about the strengths and weaknesses of the functional and aesthetic elements seen in each design. The student then went on and researched the ergonomic requirements for a bar stool which guided their decision to develop a stool of a certain height to fit under the breakfast bar. A little feedback has also been gathered.

Initial Research: Existing outdoor recreation tops.

Dad and I worked together to decide on the **Pros** and **Cons** of these existing solutions.

	<p>1</p> <p>Good height collar for sun protection. Possibly good visibility due to stripes on the sleeve. Long sleeves are good for sun protection. Good flexibility.</p> <p>Loose fit won't be comfortable under a life jacket. Collar may not be comfortable. Dark colours hold heat. Material may not perform in water. Cuffs not necessary.</p>		<p>5</p> <p>Mesh could be included for flexibility and breathing. Visibility is great. Contrast with the seams is a cool aesthetic. Good length if it wasn't too loose. Material will dry well. Material may not be warm. The fit is too loose and bulky which will prevent warmth. No eleeves so lacks sun protection. Neckline is not good for sun protection.</p>
	<p>2</p> <p>Good shape - relaxed fit but not too baggy, no bulk. Fitting sleeves are better as won't catch wind and are warmer. Good length.</p> <p>Doesn't have collar or high neck for sun protection. Doesn't have an efficient way of functioning. Colour retains heat and bad visibility.</p>		<p>6</p> <p>Good slim fit and long sleeves will make it warmer. Half zip collar is a good function. Neck is at a good height for sun protection. Contrast in seam colour is a cool aesthetic. Material it is made from doesn't look like it will perform in water. Colour is too dark so will retain heat.</p>
	<p>3</p> <p>Good pocket however may not be accessible with life jacket and unnecessary. Zip placement could be looked into for function. Great neckline made from good material.</p> <p>Cuffs may be too bulky, but are good for sealing warmth. Heavy material may not be as comfortable. Needs to be more fitting as life jacket will be on top.</p>		<p>7</p> <p>Zip is a good function but not all the way through. Good neck height for sun protection. Sleeves for good sun protection. Use of different materials is clever for different parts.</p> <p>Too bulky due to fit, fabric used and full zip. Hood is unnecessary and bulky. Materials are too heavy. Pocket doesn't have much use.</p>

Key Decisions Made

After analysing the existing recreation tops I am able to make the following key decisions.

- The garment will be a top half garment
- Visibility is important
- Must be a slim fit as bulk will not be good under life jacket
- The material used will be important as it needs to be flexible, comfortable, perform well in water and be warm but not heavy

After analysing what Dad currently wears and what he owns, I was able to figure out that function will be important as it is something that will give my outcome a point of difference from what is out there. This function needs to be specific for the limited movement Dad has been left with. I have learnt that neck height is important for sun protection and sleeves provide sun protection well. I may be able to make use of different materials to achieve long sleeves without making the garment too hot for summer.

Next Steps

- I am now going to analyse existing functions of different water sport based solutions. I will look into wetsuits and tops that are being used in the water sport industry today.
- I know now that sleeves will be an important factor so I will also look into existing sleeves on garments and different materials that could be used for them.
- I will also look into the history of wetsuits and how they have developed over time.
- I may find a practicing technologist to analyse so that their practice can influence mine.

Excellence is also indicated in this research. The student has gathered a targeted range of images of existing solutions. They have analysed each example for pros and cons and the key stakeholder has given relevant feedback. The evaluations clearly consider the wider social and physical environment and the very specific needs of the brief which is to develop a wetsuit top for a stakeholder with limited movement in their shoulder. Every evaluation links to the needs of the environment. The evidence also shows the student has analysed the findings from the evaluation of the research and feedback informs the evidence. They have also communicated what they intend to do with those findings in relation to the developing design. The student then went on to refine their ideas using functional modelling and further research as indicated in their next steps statement.

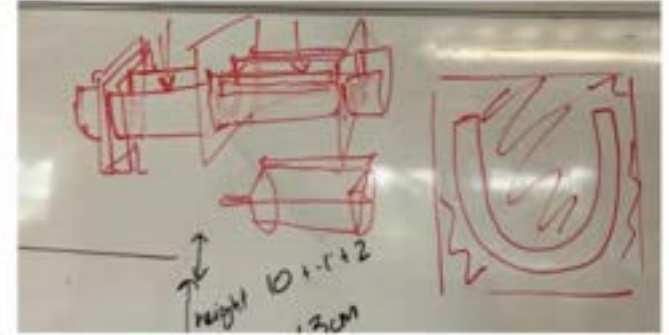
Functional Modelling to explore function & aesthetics

The second key criteria required for Excellence is evidence of ongoing functional modelling. When making Excellence judgements you should be searching for range and purpose in the ongoing functional modelling.

The explanatory notes in both standards reiterate that functional modelling should be used to explore and evaluate developing design ideas and conceptual designs and undertaken to gather proof of the outcome's likely technical feasibility and social acceptability.

As an assessor when you are looking at evidence of functional modelling which may indicate Excellence you might ask these questions.

- Has the functional modelling been ongoing and clearly used to explore and determine aesthetic and/or functional features?
- Did the student know what they wanted to find out by doing the modelling? Is it relevant, purposeful and does it add depth to the submission. The method of modelling is also a key here as some models reveal functional features better, for example mock ups, technical drawings, diagrams or CAD and some forms of modelling suit the exploration of aesthetics better for example, coloured sketches, mood boards and mock ups?
- Have the results of the modelling been analysed and evaluated (not described)?
- Has the modelling resulted in the student recognising the small modifications or tweaks needed in their developing design. What was learned about the functional and aesthetic features of the developing design through doing the modelling?
- Has the modelling helped the student to determine how suitable the idea might be?





Pictured above are some full scale drawings done on the concrete to get a feel of sizing for the project and get a better understanding. After drawing the full size chalk drawing with the desired dimensions of 500 mm by 500 mm and 400 mm I discovered it was not possible to make a functioning table with something so low if I were to use my design.

After consulting my client, she agreed with me on the fact the measurements were in fact very small and she believed she made a mistake in terms of the sizing. Together we changed the height to be a more reasonable measurement of 650 mm high, this means it will be a little bit shorter than a normal table but a lot bigger than the dimension my client originally told me which will allow her kids to grow into it and use for a few years when they get older and bigger. I also made it 650 mm long to match the height so it is a square and doesn't look out of proportion, whilst also keeping her original 500 mm width.

A key component of Excellence is the range and purpose of the functional modelling. In this extract the student has physically drawn on to the floor to determine the space required for a design being developed for a table and chairs. This is relevant and purposeful modelling which clearly considers the needs of the wider social and physical environment. A key stakeholder has been consulted and mistakes in the measurements and subsequently refinements to the design were made to ensure fitness for purpose. In the broadest sense, for example, the longevity of the design as the children who are using it grow older.



ONE

INITIAL OPINION: the stakeholder believes this example looks very nice and like the initial shape and the curve part in the middle.

POSITIVES: the curve part in the middle, height and proportion of size, strong material such as steel, glass, and ceramic) shape, ergonomics.

NEGATIVES: the symmetry of the shape is in accurate. As the bottom is smaller than the top and hands at both the same size.

REQUESTS/CHANGES: Make the bottom slightly larger. Make the middle glass part larger to reduce the width difference.



TWO

INITIAL OPINION: the stakeholder believes it is very cool and designed and made very well. The stakeholder really like the brass rings at the bottom with the timber.

POSITIVES: the dark coloured timber is very pleasing and works well with the brass rings. This piece is made from recycled timber which is very good for the environment and is sustainable.

NEGATIVES: the shape is quite simple just like a cylinder.

REQUESTS/CHANGES: add more shape to the mill.



THREE

INITIAL OPINION: the stakeholder believes this example is very medieval and Viking like.

POSITIVES: it is made strong and made from strong durable material. Looks cool and unique.

NEGATIVES: the top spike shape around the body is very uncomfortable and impractical except for aesthetics.

REQUESTS/CHANGES: Somehow change that spike shape and make it smaller of out of the way of here your hands are supposed to be.



FOUR

INITIAL OPINION: this example is very unusual and has far too many lines and bumps.

POSITIVES: it is unique and look like a piston which is very original and never seen before which is quite good

NEGATIVES: it has far too many lines and bumps. There is a lot going on and I don't see a lot of people want a piston themes salt and pepper mill. It's quite hard to see what is going on and how it will work

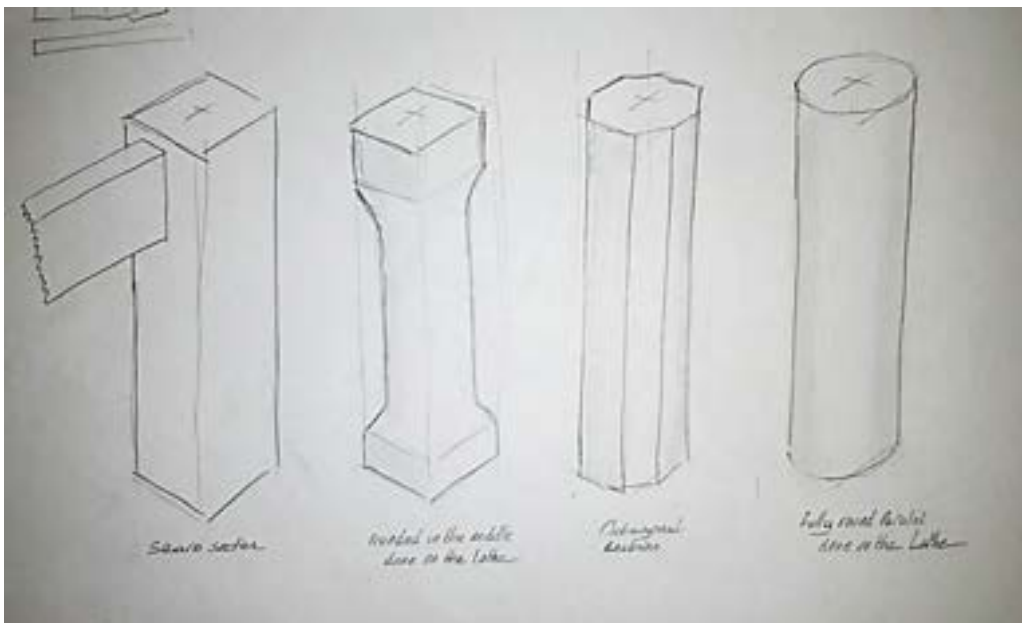
REQUESTS/CHANGES: reduce the line and bumps and make it more consumer friendly by design it to appeal more to the consumer.

The depth of the analysis and evaluation of the functional modelling is also a key to Excellence.

The student has communicated analytical thinking about the function and aesthetics of each concept. You don't have to infer what is happening in this evidence.

They have evaluated each design for pros and cons and suggested refinements.

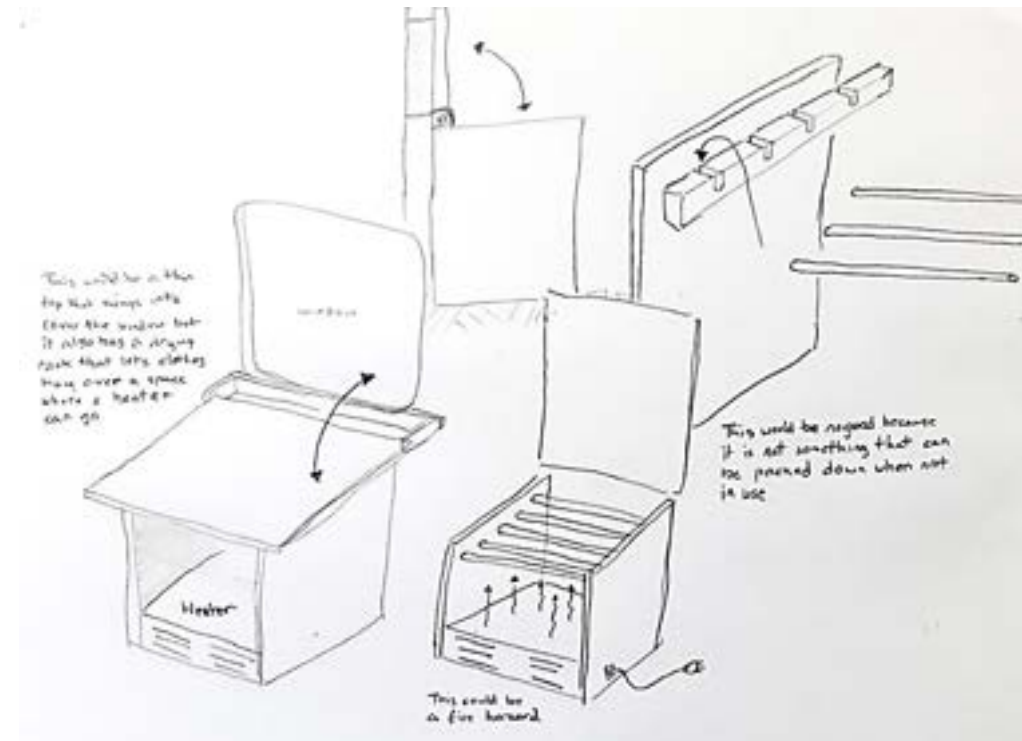
The stakeholder's opinion on each design is overt and the student has thought about what they learned from the functional modelling and communicated the direction the design could take.



1. Encourage students to annotate their sketches and include the pros and cons or strengths and weaknesses of each model. It is often in those little notes that the student communicates evidence of much more than just aesthetics and function.

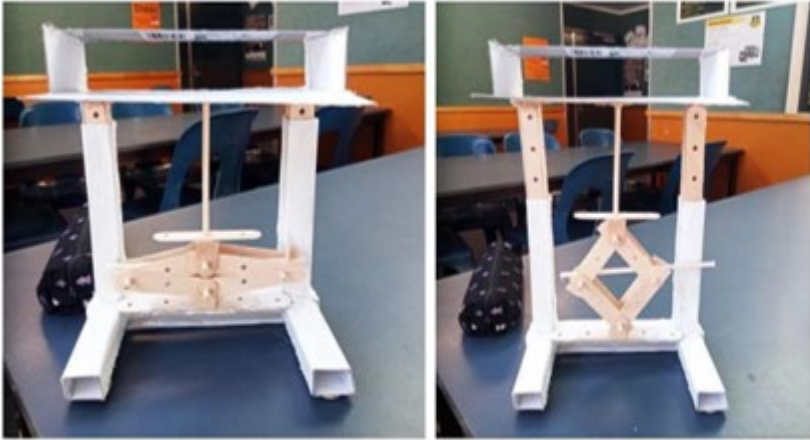
This crated design reveals the student can draw well; however, the modelling doesn't reveal anything about the design's fitness for purpose.

As an assessor you would need to infer a lot regarding what the evidence is showing.



2. In this ideation the student reveals much more than just aesthetics and function.

There is evidence of context considerations and fitness for purpose in the broadest sense as the student has mentioned technical feasibility, social acceptability and safety in their annotations.



Don't underestimate the ability for students to gather relevant evidence from functional modelling that uses the simplest of materials.



But remember the functional modelling is not purposeful unless it is evaluated, and feedback has been gathered. Especially if the student wishes to secure Excellence grades.

Feedback should

- Come from more than 1 person
- The people giving the feedback should be carefully selected
- Be woven throughout the evidence
- Be relevant
- Inform decision making

EN2 at both levels states that stakeholder feedback must be used to inform the making and trialling of the outcome and a student cannot make an authentic judgment of fitness for purpose without it.

Good feedback offers the student an opportunity to refine the outcome because the feedback is purposeful. Feedback should not just confirm what the student already knows but could offer suggestions for refinement or alternatives. Guided questions which encourage feedback about the prototype's specifications is the best way to get relevant and purposeful feedback. You might have to show students how to develop purposeful questions which will allow them to gather relevant feedback.

my stakeholders mentioned how there wasn't that much flavour to the frittata and when it was reheated the next day the product didn't look or taste too appealing as it was when it was first made.

Chop choc into small pieces to increase surface area to melt faster

"There could be a better depth of pastry so that it is thinner and you can add more curd into it."

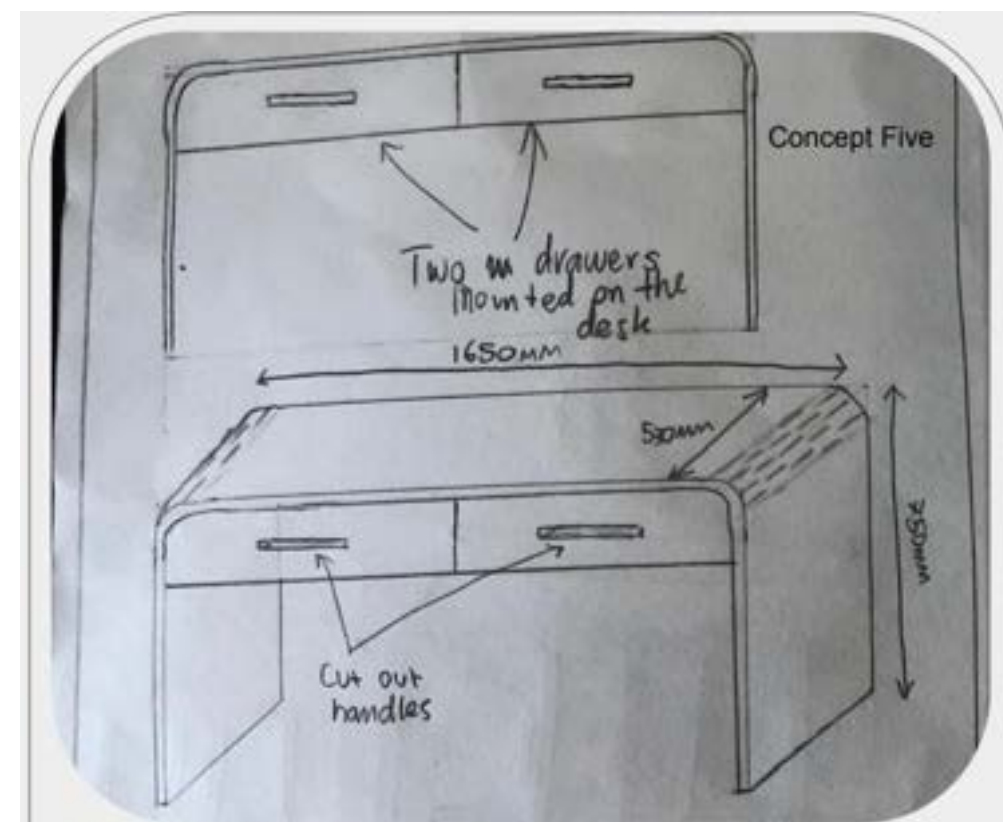
Feedback

A last criteria for Excellence is evidence of ongoing feedback. As an assessor when you are looking at the student's research ask yourself these questions before making a judgement of Excellence.

- Is the feedback relevant? or does it just confirm what the student already knows?
- Does the feedback come from more than one stakeholder?
- Does the feedback inform and confirm the selection of design ideas?
- Is the feedback woven throughout the evidence? If you grade a work at Merit or above the feedback must be ongoing.
- Is the feedback about the aesthetic and functional features?

When making judgements it is not about how much feedback there is, it's about how it is used to guide the student in the refinement of the conceptual design.

This example shows purposeful feedback from three stakeholders which encourages further exploration of aesthetic and functional features.



My thoughts: This is the most aesthetic of all of the designs because of all of the curved edges. I intend to make this using slats in the wood and being able to curve it with this. This could be a very bad way of making the corner because it may not be able to support all of the weight that will be on the desk. It also incorporates a few drawers underneath the desk so that my client can store things such as stationary. The legs are also something that could be challenging to make throughout the project because they are so thick but also have the curved part at the top.

Client Feedback: *I love the mid century nature of this piece and definitely think it would be a beautiful keepsake piece of furniture. My only concern is the roll off edges as I think pens and paper might slide off the edges too easily which could be a bit annoying. Possibly straight edges are more suited to house what will be sitting on top.*

Key Stakeholder Feedback: This is cool. I like that it is different. Maybe the papers will slide off the desk? Would look great with ply so you could see the ply laminate.

Wider Stakeholder 1 - I love the curved edges, I think that it looks really good, I just think it is quite small and wouldn't work for what you want it to. I think that you should definitely do curved edges on the desk that you choose.

Fitness for purpose

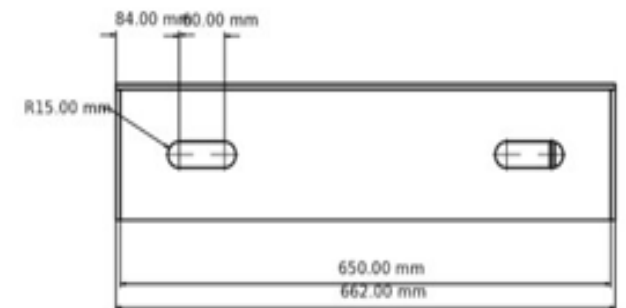
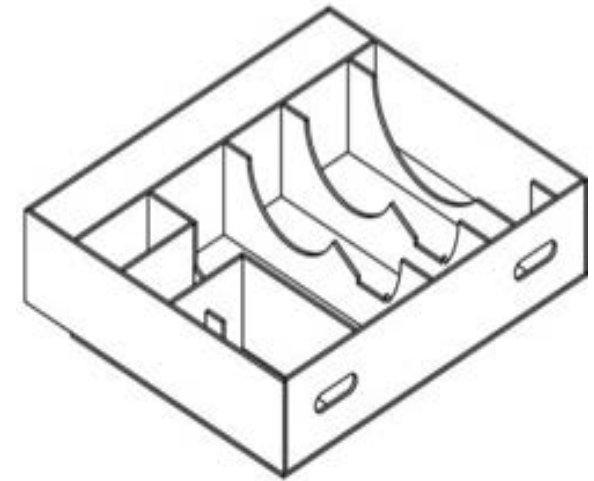
Excellence at Level 2 and 3 requires the student to develop a **justified conceptual design** for an outcome and this requires two key pieces of evidence.

- **Synthesis** of the results of their ongoing research, modelling and feedback to evaluate their conceptual designs
- **Substantiation** of the outcome's potential fitness for purpose.

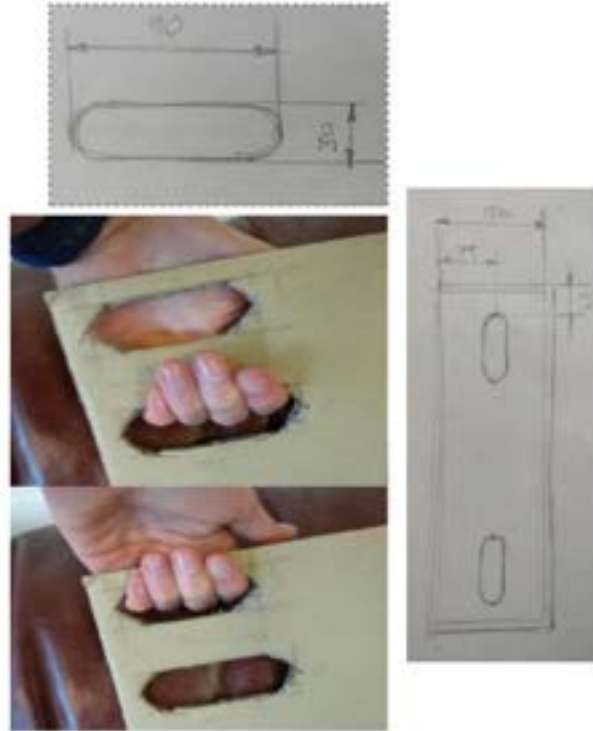
To substantiate means to prove that the developing outcome meets the needs of the brief. Evidence for substantiation would reveal the student has made clear decisions informed by research, modelling and feedback. **Throughout the evidence they will have used the results of their explorations to undoubtedly ascertain the look and function of their conceptual design.**

At the end of the conceptual design journey the student should have developed an idea that is fully ready to be prototype. **Ask yourself is there any aspect of the design that is unresolved?** and if there is, it is highly likely the work is not indicative of Excellence.

For example, if a final conceptual design has a handle where is the evidence to prove why the student choose the location and style of handle?



Substantiation of Fitness for purpose



To find the dimensions I did some functional modelling with a piece of scrap cardboard I had lying around. I first made a best guess based on my own hand (80x30 with rounded corners). This proved to be a bit too tight even for my hands, so I increased the width to 90, and it works very well. I also had my key stakeholder test them, and he said that the 90mm variant was much better. As my key stakeholder is 6'4", I trust that his hands can represent the upper limit of hand size in the population of potential users of this telescope case.

Now I just to place them on the telescope case. To place them I have

- Made them halfway up the top half of the case
- Made each handhold the same distance from the edge
- Made sure they do not overlap with a rib

I found that these conditions are met when the closest edge of the handhold is 69mm from the relevant end of the case.

The dimensions of the final handholds are also on the right.

Students often make decisions about the look and function of their design very quickly without sufficient exploration. Look for 'the why and the how' – especially at higher grades. If substantiation is evident the student will likely be making comparisons and carefully analysing their developing designs against their specifications and context considerations. The results of their explorations will be clear and reveal why some ideas have been deemed suitable to develop while others were dismissed.

In this sample the student is refining the conceptual design of the handle of a telescope case. They have substantiated their decision to use a handhold through the ongoing functional models which were tested and compared and then given to the stakeholder to trial.

LAPTOP STAND

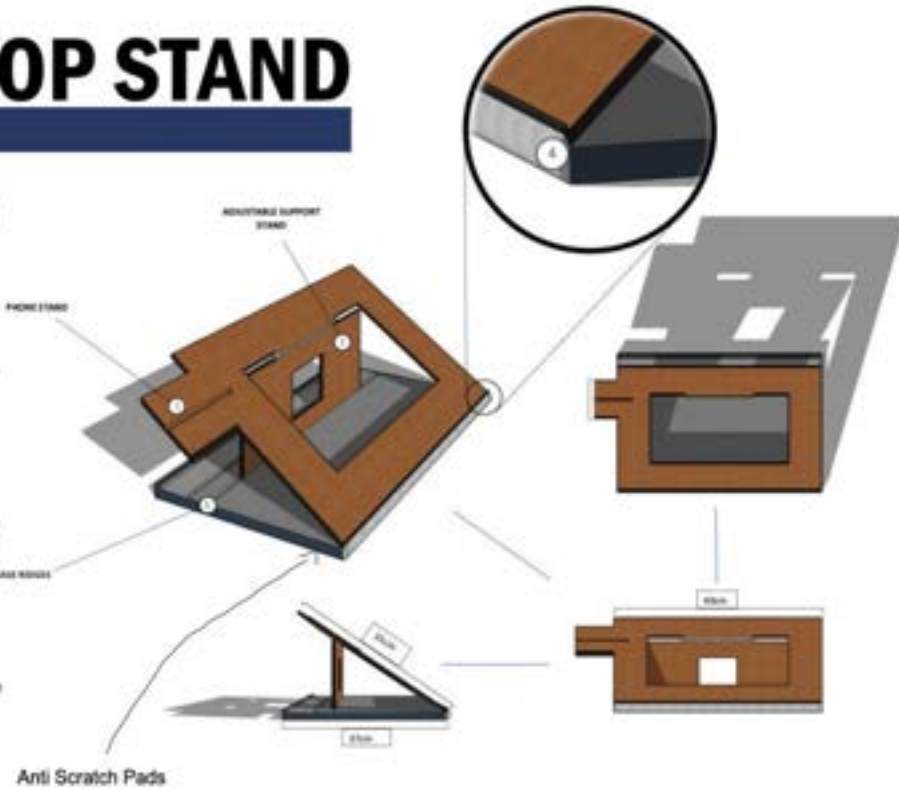
CONCEPT 4

1. Phone Stand: Area designed for phone to sit on. With laptop charger groove cut into the stand to provide a flat surface for the phone when charging laptop.

2. Adjustable Support Stand: Stand that fits into three base ridges (3), height is adjusted dependent on which base ridge the stand is locked into. Has hinges at top of stand to enable movement of stand and be able to fold flat.

3. Base Ridges: Grooves in base that allow support stand to lock into and adjust height.

4. Curved End of Base: To allow laptop sitting area to move up and down and allow a flat fold and height adjustments.



To substantiate the fitness for purpose of the proposed technological outcome the student should also communicate a final detailed description of how their proposed design looks and functions. This evidence usually comes in the form of a sketch, diagram, mock up or model with annotation and a written statement explaining the ways the potential outcome meets the brief. Remember at the end point of this standard the conceptual design should be ready for prototyping, and a final detailed description and evaluation should reveal this. At Excellence you will want to see dimensions, colours, perhaps multiple views which reveal how the outcome works and ideally how it fits in to the environment where it will be used. One thing that often differentiates Excellence evidence is that the student has also gathered feedback on the final proposed outcome to support their evaluation.

Measurable Specifications

Aesthetic

- ❖ Discretion around the prosthetic leg will be possible because of the 40cm invisible zipper closure and the full-length trousers style.
- ❖ The neutral blue/black colour goes with the majority of what XXXXX already wears and will be easy to pair with things in any season.
- ❖ The colour will also not show marks that might happen during her day at work
- ❖ The bright blue 10cm tall daisy that will be embroidered on the front leg will give the trousers a pop of colour and shows XXXXX's quirky style.

Functional

- ❖ The trousers will be easy to dress in as they have the zipper in the side of the leg so XXXXX can stand to dress. Currently, she must sit down to get dressed on her bed. Getting dressed will be more efficient in terms of difficulty and time.
- ❖ The pants are more durable and will last longer than what she is currently wearing because they have a knee pad built into the area where the top of the prosthetic usually rubs the trouser fabric.
- ❖ The 190mm x 160mm pocket has been designed to hold her iPhone securely.

Measurable specifications are also a great way to show substantiation. Attributes should become specifications as the student explores and refines their conceptual design. The rule of thumb here is to ensure the specifications, especially if they are final specifications, are measurable. Specifications are also a great way to also show synthesis of all the student has been learned during the development of the conceptual design.

In this snapshot the student has developed specifications for a pair of trousers for a stakeholder with a prosthetic leg.

These specifications also substantiate how the trousers look and function.

Synthesis

Requires critical thinking skills. Such as -

Analyse

Critique

Compare

Evaluate

As the students think critically, they will likely be **inferring relationships** between what they have discovered, they **find commonalities or differences** that link the information and should be **making strong connections** between ideas.

A key thing to consider in assessment is that **synthesis doesn't just happen at the end of the journey**, the evidence of those connections will likely be throughout the students work and this is what allows them to justify the aesthetic and functional features the student has chosen to include in their design.

To justify means to **support an idea or decision with evidence**. Look for evidence that reveals the student has made clear decisions that are informed by research, functional modelling and feedback.

When you are making Excellence judgements ask yourself '*is there any aspect of the conceptual design that has not been confirmed in the evidence*' and '*are there any questions still to be answered?*' and if there are, it is highly likely the work is not indicative of Excellence.

Fitness for Purpose Level 3

- Technical Feasibility & social acceptability
- Sustainability of the resources used
- Ethical nature of the testing practices
- Cultural appropriateness of trialling procedures
- Determination of life cycle, maintenance and disposal
- Health and safety

A student operating at Excellence at L8 of the curriculum will most likely show **substantial links to fitness for purpose in the broadest sense in their specifications** and it will be clear during the development of the conceptual design and in the final conceptual design.

Ideally the evidence of fitness for purpose in the broadest sense will only consider the criteria **relevant** to their developing design. The criteria in Explanatory Note 5 are not a tick box exercise, and it is important that the student hasn't just addressed these criteria without thinking if they apply to their work or not. Ask yourself does the student understand what the criteria means to their unique brief? For example, if the student is considering health and safety in the practices used to develop the outcome, then the evidence would more likely show an evaluation of any potential H&S risks related to their developing design e.g. stability, sharp edges, flammability as opposed to evidence of the rules and regulations in the workshop.

Evidence of determination of life cycle, maintenance and ultimate disposal

“If the design has parts that can be replaced, then the speaker will be more sustainable overall. Could the speaker case be designed to slot together, like a kitset????”

Social acceptability

The TSB arena has a dress code and WOW is an event where people wear creative things, lots of colours, prints and textures. I will need to make sure the dress isn't too casual that XXXXXX feels underdressed and out of place.

Technical acceptability

I think this design is unique, the way the drawers all meet at the middle, but I think it would be very hard to get the design right with all those angles

Health & Safety, Social acceptability

In terms of safety, as stated earlier, the bar stools only function is that of being a seat and, with a solid seat and legs slightly splayed, it also must have a good centre of gravity

I really like the design with the laser cut etching of the Nike logo, but I didn't use that because it was copyrighted instead, I designed my own unique logo which has not restrictions if I want to make multiple items and sell them.

Ethical nature of testing practices

Cultural appropriateness

“Well done XXXX these sketches all respond to the need to modernise the school uniform. My immediately thoughts are if the designs are gender neutral enough, perhaps culottes could be an idea instead of shorts or skirts?”

Takeaways

- The purpose of these standards is to **develop the functional and aesthetic features of a unique conceptual design** and the end point of these standards is a conceptual design that is ready to be prototyped. Make sure the final design doesn't too closely resemble (copy) an idea seen in their initial research.
- Evidence of the needs of the social and physical environment is important at both levels.
- **Ongoing research and functional modelling** must be used to analyse and determine the fitness for purpose of the functional and aesthetic features of the developing design.
- Encourage students to **use a range of relevant stakeholders** and to **gather relevant feedback which must be evaluated** to show how it could inform the development of their outcome.
- **Substantiation is not about volume** i.e., just gathering more and more evidence - it's about using the results of research and modelling to prove the reasons why the functional and aesthetic features of the conceptual design have been chosen.
- **Synthesis requires students to show connections between ideas** and to justify the decisions made in relation to the designs functional and aesthetic features.
- An evaluation of fitness for purpose requires the student to communicate a design that is ready to be explored using materials and equipment. Evidence should show **details of how the outcome will look and function**. The student should be able to justify the probable outcomes fitness for purpose and ability to meet the brief. Excellence would reveal final specifications that are measurable.

Assessor Support

For additional assessor support go the bright blue Assessor Support link on the NZQA Technology Subject page.



This link gives you access online modules for Technology with more up to date modules and tools coming in the new year.

These can only be accessed via Pūtake which requires an ESL login. Your Principals Nominee can help you set this up.

Assessors can also request face to face best practice workshops or guest speakers from NZQA. Alternately email NZQA directly.

workshops@nzqa.govt.nz