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Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Materials and Processing Technology 2025

**92015 Demonstrate understanding of techniques
selected for a feasible Materials and Processing
Technology outcome**

EXEMPLAR

Achievement

TOTAL 04

92015 - Demonstrate understanding of techniques selected for a feasible Materials and Processing Technology outcome

INSTRUCTIONS

Respond to the following task about how you trialled and selected techniques for the design of a feasible outcome. Support your answers with text or images. Your evidence should be presented in the form of a slideshow or visual timeline. You should aim to write no more than 1200 words in total.

If you choose to respond orally, your response should be no longer than 4 minutes.

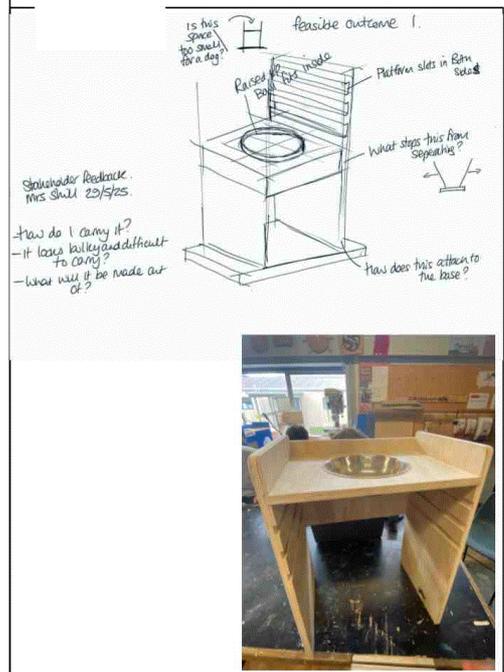
(a) Provide an image or images of your feasible outcome and briefly describe its specifications, including physical and functional attributes, the end user(s), and your product's intended environment.

Situation: In nz there is a cost of living crisis and not a lot of people can actually afford housing, because of that there is a large amount of unwanted dogs and not a lot of rentals allow dogs. [redacted] and other charities get a lot of dogs and have housing for them, but [redacted] doesn't have homes, so they give the dogs to foster homes and supply them with dog equipment. Because of the amount of dogs, [redacted] needs more foster homes, and equipment to supply the foster homes.

Brief: I have been given the opportunity to design and make a dog feeder/water station for the foster carers at [redacted].

Specifications:

- Must be adjustable - height (up and down) which is a functional attribute to allow different sized dogs to eat from the dog feeder.
- Safe for the dogs (non-toxic) (round edges), functional attribute, stops dogs from harming themselves.
- Durable, functional attribute, so the dog feeder lasts a good duration of time.
- Easy to transport/move/set up, functional attribute, so the dog feeder can be easily transported from house to house.
- Needs to have a bowl or hold a bowl, functional attribute, so there is a space for the dog's food/water to go.



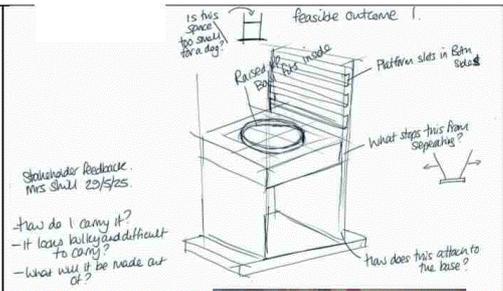
(a) Provide an image or images of your feasible outcome and briefly describe its specifications, including physical and functional attributes, the end user(s), and your product's intended environment.

Intended Environment: The dog feeder is intended to be used inside as it is not fully waterproof, but it could be used outside as well. Since the dog feeder is going to foster homes, it could be used in multiple different places, or on multiple different surfaces such as, wood, carpet, tiled floors, or linoleum.

Final User: The final user of the dog feeder will be the foster dogs at [redacted]. It will be used so that dogs can eat without getting any sort of neck issues from leaning down. Since [redacted] can't trial our prototype dog feeder, we sent it home to a few different teachers with dogs to get their feedback.

The stakeholders (teachers with dogs) we chose were, Ms. [redacted] with her labrador, Dakota, and Mr. [redacted] with his puppy, Flo.

Our other stakeholder was Ms. [redacted] who was our technology teacher and gave us any tips along the way.



(b). Functional attribute 1: Must be able to support a bowl

The first functional attribute I have chosen is that it must be able to support a bowl. The two techniques I trialed to achieve this functional attribute were, jigsawing, and joining semi-circles.

The first technique we trialed was, jigsawing, which we tested by getting a piece of scrap ply and drilling a hole in it big enough to fit the jigsaw blade, then we used the jigsaw to cut a circular hole in it to hold the bowl.

The second technique we trialed for making the bowl hole was, joining two semi-circles. To test this, we got two pieces of wood and cut a semi-circle in the side of each one. We then dowel joined the two cut pieces of wood together to create one piece with a circular hole in the middle of it to hold the bowl.

For the feasible outcome, we decided that it would be easier and more effective to cut our bowl hole using the jigsaw rather than joining two separate pieces of cut wood together. This way also made it easier to use ply to create the platform as it would likely be very difficult to join two pieces of plywood together using dowels.



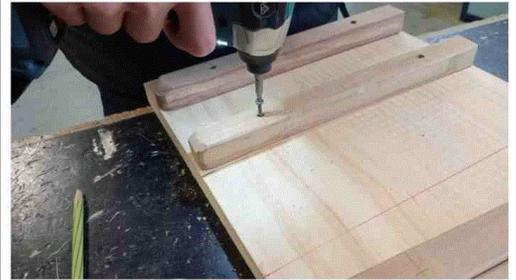
(b). Functional attribute 2: Adjustability of the height of the platform

For my second functional attribute, I have chosen adjustability. Meaning that the dog feeder platform must be adjustable in height, and must be accessible to dogs of many different shapes and sizes.

The first technique trialed was, cutting grooves into the sides of the dog feeder. We cut the grooves into the sides of the dog feeder by asking our teacher to cut them with the table saw.

The second technique we trialed was, attaching pieces of wood onto the sides of the dog feeder. We attached these pieces of wood by drilling holes into it, and then joining the two pieces with screws.

For our feasible outcome, we decided that it would be better to use the first trialed technique, and cut grooves into the sides. We decided this because it would take up less space, and because it would be easier to ensure that both side were on the same level by cutting the groove on one big piece of ply and then cutting that piece in half to make the two sides.



(c) How did you use at least two different stakeholders' feedback when choosing techniques related to your feasible outcome?

When asking Ms. [REDACTED] these questions,

1. Explain how easily Dakota accessed the dog feeder.
2. Explain how you found the adjusting feature.
3. What was our dog feeder's stability like?
4. Did Dakota go back to the dog feeder after the first use. If not, why?
5. Explain whether or not the dog feeder was safe for Dakota.

Ms. [REDACTED] said,

"As Dakota is a lab nothing stopped him from eating the food, he was able to go to the dog feeder and access it easily. I had to put the bowl on the lowest level as it was too high for him to eat. It was sturdy and did not move. He went back to the feeder as it had food in it. The feeder is very bulky but it is safe."

Based on Ms. [REDACTED] saying "I had to put the bowl on the lowest level as it was too high for him to eat.", we realised that it wasn't obvious enough that our dog feeder was reversible, so we added a 'big dog' and a 'little dog' sticker based on Hairy Maclary to either side of the dog feeder, showing that it could be reversed, and that one side was for big dogs and the other side was for smaller dogs.



(c) How did you use at least two different stakeholders' feedback when choosing techniques related to your feasible outcome?

Ms. [redacted] gave us feedback on our initial feasible outcome, telling us that we should trial making the base on a scrap piece of ply. We did trial attaching the base, and realised that it was not a good idea to have a base as with the thickness of ply we were using, it broke when we tried screwing it in. As a result, we decided to add a back brace to the dog feeder instead.

Ms. [redacted] also gave us feedback on our feasible outcome as to how we would make the sides adjustable, by getting us to test whether or not pokey inny grooves were better than pokey outty ledges. We determined that pokey inny grooves were better for two main reasons, for one it took up less space and allowed us to make our dog feeder slightly smaller, and because that way we could cut grooves into one big piece of ply before cutting it in half, which ensures that both sides will have grooves at even heights.



Achievement

Subject: Materials and Processing Technology

Standard: 92015

Total score: 04

Q	Grade score	Marker commentary
One	A4	The response considered two functional attributes. The candidate has compared them and selected an appropriate technique for each functional attribute. Trialling for appropriate techniques has been discussed. Limitations in the stakeholder feedback prevent the response from being considered for Merit. For example, one of the feedback items is on the height of the platform, which does not relate to the selection of the techniques.