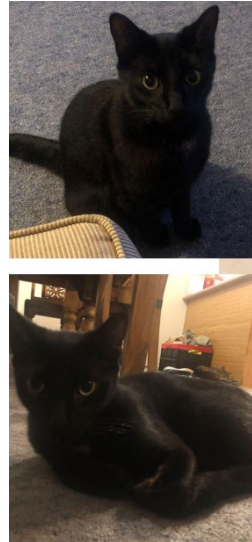


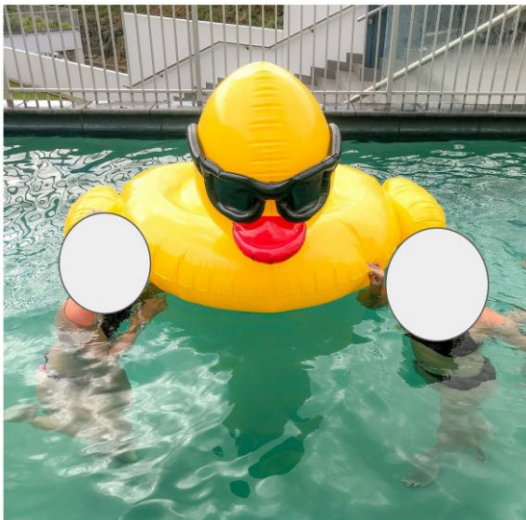
Brief

To design a coat suitable for a cat to wear in the rain. After owning a cat for most of my life I have discovered that they don't like getting wet in the rain but they love being outside, for this project I will make a raincoat for my cat made out of his favourite materials to ensure that it would be comfortable and suitable for him. This coat will have to keep him safe from cars outside with its bright colour, and keep him dry with water proof fabric and a hood as well as being comfortable.

Achieved
 NZQA Intended for teacher use only



Main material i have chosen to explore and experiment with for this project:



What Are Inflatable Pools Made Of? Floats, Toys, And Pools

Before getting an inflatable pool, you might want to consider what it's made out of before you pick one. We have some allergies in our family to latex, and were worried about harmful chemicals in the plastic affecting our youngest. After hours of research, I have an answer.


Inflatable pools and floats are typically made of polyvinyl chloride, a widely produced synthetic plastic polymer that has been made softer with the addition of plasticizers like phthalates. This form of polyvinyl chloride is commonly referred to as PVC or vinyl by inflatable pool manufacturers.


There are other materials being used, though they aren't very common. The added chemicals to make the PVC more flexible could be dangerous or cause allergies to some people. It's important to know what chemicals your inflatable pool are made out of before purchasing or using it.




This PVC pool toy had reached the end of its life as an inflatable duck after many years of fun and use. I deconstructed the duck, keeping all of the parts so they could be reused again. I plan to experiment with the yellow pieces for this project as the PVC is waterproof and will provide the right properties and attributes for this project.

Initial Experimentation

MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof PVC Fleece thread	I combined these materials by stitching them together using parallel straight lines like you would on a quilt but straight across instead of diagonally.		I discovered that this was very difficult and it didnt go to plan. The sewing machine foot couldnt slide on top of the yellow PVC because i needed to use a teflon or walking foot which we didnt have. The finished outcome became warped and bunched up which wouldnt be suitable for my design. I think i needed to sew the lines starting from the same end each time and maybe try it with the PVC underneath so the foot could slide on the fleece more easily. I'm also not happy that the colour of the dark fleece comes through the yellow PVC making it not so bright and vibrant anymore.

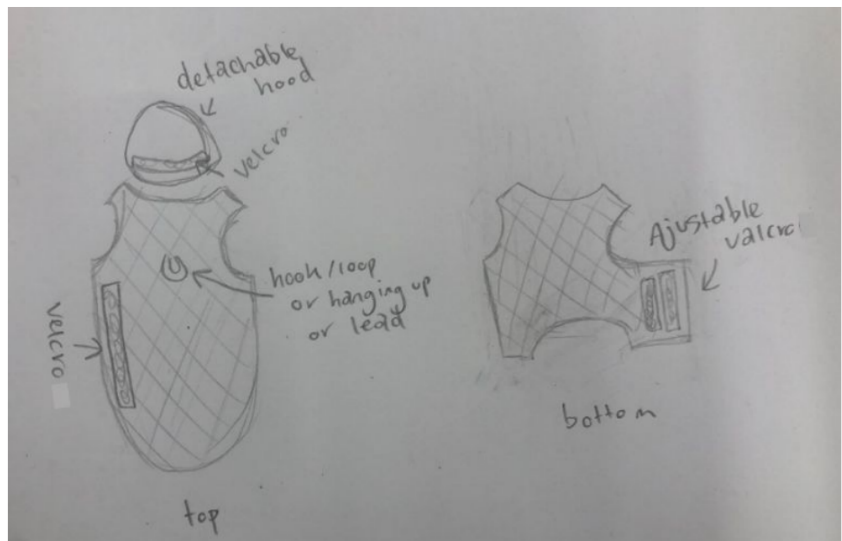
Further Experimentation			
MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof fabric Fleece Thread	Sewing them together with a cross quilt like pattern to combine the materials and make a combined strong fabric that is warm and suitable for the purpose of a cat raincoat.		I discovered that this made the finished product a combined material that is very suitable for a rain coat, if you take away the aesthetics part of it in terms of the dull colour. The outcome is a waterproof exterior with a soft and warm fleece interior. Changing the stitching pattern and sewing the layers upside down gave a much better finish that is flat and well held together. This would be suitable for the design but im still not happy about the dull colour.

Final Experimentation			
MATERIALS	EXPERIMENTATION	OUTCOME	DISCOVERY
Waterproof fabric Fleece fabric Stabilizer Thread	Sewing them together to create a quilt like material using a cross method, with the stabilizer in the middle of the water proof fabric and the fleece fabric to make the yellow of the water proof material more vibrant.		I discovered that using a white stabilizer in the middle of the two fabrics separated the dark blue from the opaque yellow and made the yellow colour look so much more vibrant. I did still need to sew it upside down with the yellow PVC layer on the bottom but that didn't seem to affect the properties at all. The thickness of the layered fabrics provides a nice rigid but still flexible material to work with for the design. I happies with this outcome and don't feel any further experiments are required.

Improvements that I made as a result of feedback and experimentation:

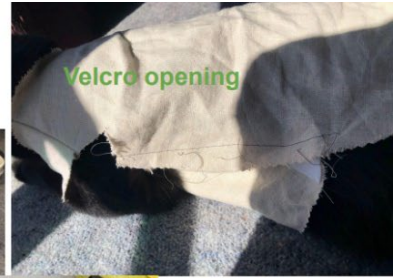
I agreed with the feedback i received there were some good ideas i hadn't considered so I have improved the design based on the feedback i received by changing the shape of the underbody piece to have a curve so it won't cut into the cats stomach. I have added a hook/loop to the centre back so a lead can be attached but it can also be used to hang up the coat when it's not being used. To make the coat fit a variety of cat sizes i included more velcro strips on the size so the fit can be adjusted. I also decided to make the hood detachable that way if a certain cat doesn't like their ears covered there is an option to remove it.

Feed back: "I can see in this design that my feedback has been taken onboard, I like the velcro use and how it makes the coat adjustable and i love the idea of a removable/detachable hood. I also really like the loop on the coat that will be used to hang the coat up on a hood and to attach a lead.



Making the pattern and mock-up of raincoat to check sizing

Feedback from end user: "I really like how the coat sits on the cat and covers majority of their body without look uncomfortable. The hood also looks very nice. I also like how the raincoat can fit on different types of cats"



Attributes and how i achieved them...

Brightly coloured	I achieved this by using white stabilizer in the middle of the two fabrics to create a more vibrant yellow colour.
Not to bulky	By drafting a custom pattern i was able to create the perfect jacket suitable for any cat also including the adjustable velcro means it can be fitted to all cats.
Covers cats full body/back	Since i created my own pattern i was able to customize it directly to the length of my cats average size.
Keeps cat dry	Because the material is PVC and used to be a pool floatie it was made for water, so i was sure that it would be a great material for a raincoat.
Is easy to take on and off with velcro fastenings	The velcro on the sides means it is quick and easy to take on and off without having to put the cats legs through the holes..
Does Not irritate cats fur	I chose the fleece fabric as the lining that will sit against the cats fur because it is warm and soft.
Has a velcro detachable hood	The hood can be taken on and off, it is attached with velcro because some cats don't like things over their ears.
Has a small loop on back for leash.	I included a small loop to the back for a leash attachment or to hang it up.
Is the correct size	Because I made the raincoat adjustable it will easily fit many different types of cats. I made the coat adjustable so as your cat grows it will still fit, aswells as fitting different types of cats.
Use waterproof fabric	I used PVC for the outer layer which i know is waterproof after doing research.
3 layers of fabric quilted together (PVC, stabiliser and fleece)	After experimenting with my fabrics and found this was the best method of combining materials to achieve the attributes i needed for this project.



Needs and/or Opportunities Following my research about our school hub and the wasted food available from our local supermarket along with my consultation with stakeholders I have identified the following needs and/or opportunities:

Need:

- use food waste provided by the supermarket
- produce a snack or dessert that is enjoyed by the students at the hub
- a baked product
- extra flavour because some people like spicy things and others don't

Additional attributes I have learned from my research and stakeholders are:

- soft and chewy texture
- made with healthy ingredients
- use some form of fruit or vegetables
- sweet flavour
- dingle serving (cut into squares/easy to share)
- must be successfully stored to maintain quality
- easy for Mum's to prepare

What was the result of my first trial:

The picture in the next slide is from my first trial which I did.

I made the chocolate and banana brownies to use banana waste and to make a quick dessert for the hub and so any Mum can just pop the brownie in the oven to quickly heat it up.

Within the hour I was able to easily make everything (the brownie and icing).

The recipe ended up using 2 big bananas.

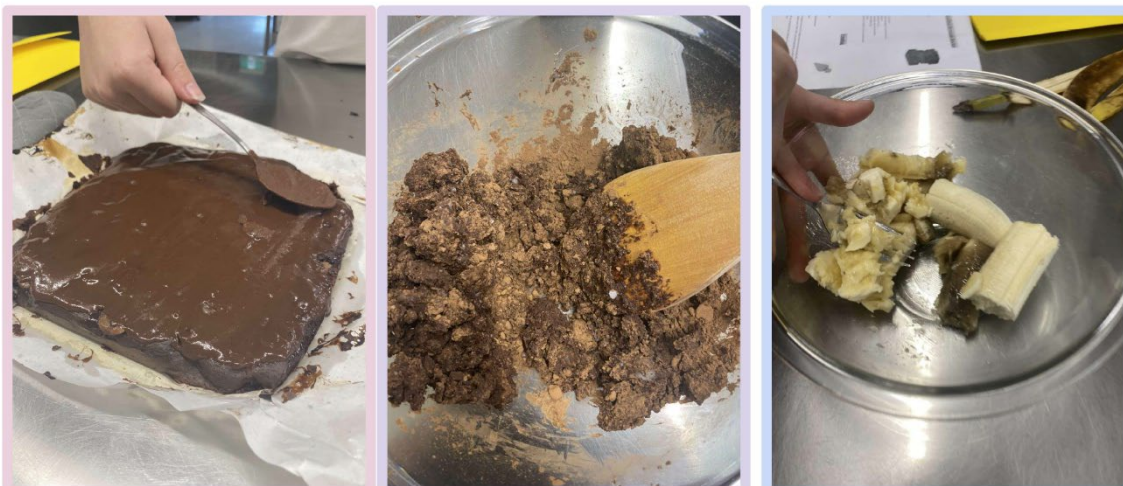
I mashed up the Bananas to manipulate them first then added all the other ingredients to combine them. After awhile the brownie was in the oven where it was transformed from a raw batter to a cooked brownie, I made the icing.

The recipe which I had wrote I followed accurately on this day however I don't think it was very successful.

The banana in the brownie was very clumpy and made the texture not very nice to eat.

I learned that with the icing I need to melt the coconut oil first and with the base (the actual brownie) that banana squashed with a fork may not be the best option to use.

Next I will freeze the brownie to see what happens



What I did next:

For trial 1 I figured out that the base recipe works. For trial 2 I decided to use a blender to mash/manipulate the texture of my bananas so there aren't big clumps in the brownie. I also decided to melt the coconut oil with the icing so it combines more easily and is smoother. I will also may be add a flour (coconut?) to hold the brownie together better and to give it more Pacifica flavour.



Evidence showing I am mashing (manipulating) the bananas




Ingredients I used being accurately measured



Banana peel being composted to reduce waste



I used applesauce in the icing because it is healthier and sweet and could use more waste.

<p>Material I am Testing: Bananas (in a brownie)</p> <p>Attribute to be Met: Must be successfully stored to maintain quality (banana in the brownie does not affect the quality)</p> <p>How will I test Attribute? By storing my brownie in the freezer and taking it out a few days later to test if the texture and flavour are still the same as when fresh and if the quality of the brownie has stayed the same (if freezing has affected the banana in the brownie).</p> <p>What I learned from test: I learned that when I put my brownie in the freezer and take it out to eat it stays mostly the same (freezing does not change the texture of brownie and the banana flavour stayed the same). Also because I am freezing and stopping the bacteria particles from growing (mould is not growing and banana is not getting old and brown).</p> <p>The brownies were frozen when I wanted them to be eaten and took a while to defrost. There was also still the clumps of banana in the brownie that were frozen inside that made the brownie not as appealing to eat as they were mushy and slimy.</p> <p>My next trial</p> <p>I decided because of what I found out in trial 1 I will now combine my materials by mixing my banana that is blended in a machine and other ingredients in a bowl with a spatula. The materials will be shaped and cut into squares that are single serve. They will be transformed by baking them in the oven to change the consistency and change its texture.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;">  </div> <p>What my stakeholder said:</p> <p>That they like the idea and the kids in the hub would like it if the banana inside is more hidden and there aren't any banana clumps. The banana clumps were left in the brownie which made it unappealing and the brownie wasn't very soft + chewy</p> <p>They also said that they actually liked it a little frozen.</p>
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What was the result of my second trial:

For the icing I melted the coconut oil first and with the base (the actual brownie) I blended the banana to make the texture smoother and reduce clumps. Within the hour I was able to easily make everything (the brownie and icing) and it turned out very well.

The recipe ended up using 2 big bananas.

I blended up the bananas first then added all the other ingredients after and while the brownie was in the oven I made the icing. This time I made the icing very well and melted the coconut butter first which reduced the clumps in the icing.

Stakeholder Feedback:

Feedback My stakeholder liked how there were no longer clumps in my brownie which made it a lot better. She also mentioned that she liked how rich and flavourful my brownie is. She said that the kids in the hub prefer brownies that are sweeter, chewy and that they like their foods more bland so I should maybe lighten how rich the cocoa in the icing is as it cancels out some of the flavour in the base of the brownie.

Why?
6 responses

The icing tasted too strongly of apple, and the apple taste clashed with the chocolate flavour. The icing was also still clod

I think it tastes better because the subtle apple flavor in the icing goes well with the brownie

It tasted less rich and the icing made it very strong which made me like the brownie without icing more

ick I never tried it

The Brownie should be the star - it's more healthy without the icing. It also wasn't very appealing to look at.

Brownie is already quite rich and chocolaty so I don't think it needs icing as well. Also if goal is healthy brownie then removing the icing is an easy way to cut back the kilojoules.

How much do you like the OVERALL product?
6 responses

How much do you like the FLAVOUR of the product?
6 responses

Did you prefer the brownie with icing or the brownie without icing?
6 responses

What do you think about the APPEARANCE of the product?
6 responses

How much do you like the TEXTURE of the product?
6 responses

ATTRIBUTES TO SPECIFICATIONS

Through my development and refinement I have turned these attributes into specifications. These are the properties and characteristics that I need the final outcome to meet. Specifications are measurable and will be used to prove the feasibility of my design.

ATTRIBUTE	SPECIFICATION
Appealing colour	Uses cocoa to give it a nice brown colour
Flavour	Uses cocoa to give it chocolaty flavour
Good texture	Uses banana and cocoa to give it nice texture
Soft and chewy	Cooked for not too long so it is soft and chewy (not too cooked)
Long storage life	Can be stored for many days without affecting its texture and flavour
Uses banana waste	Uses 2 large bananas to reduce waste
Easy to prepare	Only needs to be reheat (easy for mothers to prepare)

From my previous trial and the results from people I decided to make the brownie without icing and sprinkle on some icing sugar. During our final meetup my stakeholder tried my food one last time to give me her final thoughts she said that it was good and that I had improved a lot. She said it was like a real brownie and that the texture was good. She said it was sweet and that she liked the flavour although the banana flavour did come through a little bit. She said that if I took it to the hub it would definitely go and that the kids would like it. In the end she liked the overall taste and product and my outcome was a success. She said that she looks forward to having it at the hub one day and that the kids would love it.

